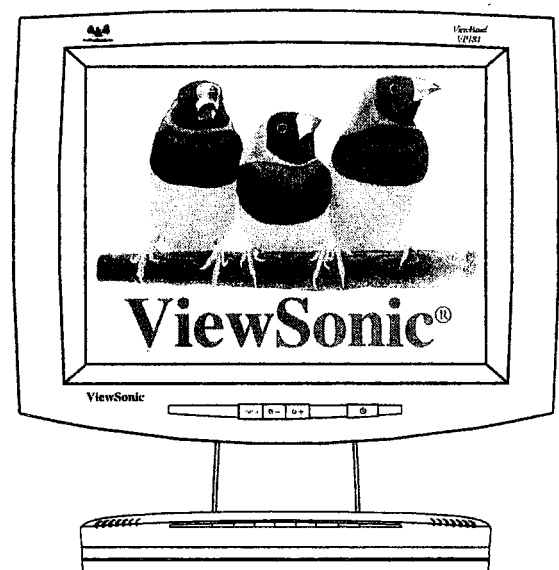


Service Manual

ViewSonic VP181

Model No. VLCDS21535-1

18" Color TFT LCD Display



(Rev. 1 – February 2000)

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Revision History

Revision	Date	Description Of Changes	Approval
1.0	2/17/00	Initial Issue	T. Sears

TABLE OF CONTENTS

WARNINGS & SAFETY PRECAUTIONS	1~2
1. SPECIFICATIONS	3~20
2. FRONT PANEL CONTROLS	21~25
3. CIRCUIT DESCRIPTION	26~39
4. TROUBLESHOOTING & WAVEFORMS	40~81
5. ADJUSTMENT PROCEDURE	82~86
6. MECHANICAL ASSEMBLY	87~92
7. RECOMMENDED SERVICE APPTS LIST	93~97
8. BLOCK & CIRCUIT DIAGRAMS	98~112



WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.

It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.

Products powered by electricity should be serviced or repaired only by experienced professional technicians.

Any attempt to service or repair the product or products dealt within this service information by anyone else could result in serious injury or death.

SAFETY PRECAUTIONS

1 CAUTION

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide lines.

2 SAFETY CHECK

Care should be taken while servicing this CRT display because of the high voltage used in the deflection circuits. These voltages are exposed in such areas as the associated flyback and yoke circuits.

3 FIRE & SHOCK HAZARD

- 3-1 Insert an isolation transformer between the CRT display and AC power line before servicing the chassis.
- 3-2 In servicing pay attention to original lead dress especially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.
- 3-3 All the protective devices must be reinstalled per original design.
- 3-4 Soldering must be inspected for possible cold solder joints, frayed leads, damaged insulation, solder splashes or sharp solder points. Be certain to remove all foreign material.

4 LEAKAGE CURRENT COLD CHECK

- 4-1 Unplug the AC cord and connect a jumper between the two prongs on the plug.
- 4-2 Turn the CRT display power switch "on".
- 4-3 Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metallic part on the CRT display such as the metal frame, screwheads, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be 1.8 megohm minimum.

5 LEAKAGE CURRENT HOT CHECK

- 5-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.
- 5-2 Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15uF capacitor between each exposed metallic part and a good earth ground (as shown in Fig.1).
- 5-3 Use an AC voltmeter with 1000 ohm/volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15uF capacitor.
- 5-4 Move the resistor connection to each exposed metallic part and measure the voltage.
- 5-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.
- 5-6 Voltage measured must not exceed 7.5 volt RMS, from any exposed metallic part to ground. A leakage current tester may be used in the above hot check, in which case any current measured must not exceed 5.0 milliamp. In the case of a measurement exceeding the 5.0 milliamp value, a rework is required to eliminate the chance of shock hazard.

Note: High voltage is present when this CRT display is operating. Always discharge the anode of the picture tube to the display chassis to prevent shock hazard.

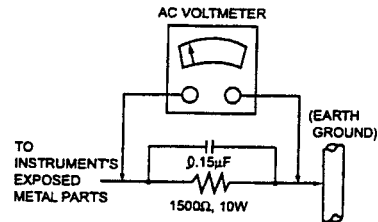


Fig. 1

6 IMPLOSION PROTECTION

Picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage and scratching during installation.

7 X-RADIATION

WARNING : The only potential source of X-Radiation is the picture tube. However when the high voltage circuit is operating properly there is no possibility of X-Radiation problem. The basic precaution which must be exercised is to keep the high voltage at the following factory- recommended level.

Note: It is important to use an accurate periodically calibrated high voltage meter.

- 7-2 If high voltage cannot be set to 24kV, immediate service is required to prevent the possibility of premature component failure.
- 7-3 To prevent X-Radiation possibility it is essential to use the specified picture tube.

IMPORTANT SAFETY NOTICE

There are special components used in this CRT displays which are important for safety. These parts are identified by the international symbol  on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design or this will void the original parts and labor guarantee.

Section 1 - Engineering Specifications

1. Scope

The following specifications are applicable to model VP181, 18 inch color LCD monitor.

2. General Description (Quick Reference)

LCD	In-Plane-Switching thin-film-transistor (TFT)		
	Size	18.1 inches diagonal	
	Effective Display Size	359.0 mm X 287.2 mm (typical)	
	Pixel Pitch	0.281 mm X 0.281 mm	
	Resolution	1024 x 768 dot (XGA)	
	Brightness	200 cd / m ² (min.)	
	Contrast Ratio	200:1(min.)	
	Color	16,777,216	
	Viewing Angle	Up 60° Down 60°(min.) Left 60° Right 60°(min.) CR>10:1	
	Optical compensation	No	
Input Signals	RGB	Analog 0.7 Vp-p / 75 $\square$	Positive Polarity
		Separate sync.	TTL level
		Composite sync	
	Digital	TMDS (Panel Link).	
	Video :	NTSC, PAL,SECAM	
	Audio :		
Display Colors	16,777,216		
Synchronization	Horizontal	30 kHz to 95 kHz	(automatically)
	Vertical	50 Hz to 75 Hz	(automatically)
	Non-interlaced	Max Pixel Rated 210Mhz	
Resolution	Horizontal	1280 dots	
	Vertical	1024 lines	
Active Display Area	Horizontal	359.0 mm (typical)	
	Vertical	287.2 mm (typical)	
	(Active display area is dependent upon signal timings)		
Power Supply Rating	AC adapter input	AC90V-264V 50 / 60 Hz	
	DC input	DC 12V	
AC Power Consumption	70W	On mode including USB	
	less than 12W	Suspend, Standby mode	
	less than 8W	Off mode(1 input signal)	
Current Rating	AC input	1.0A	@AC 100-240V
	DC input	5A	@DC 12.0V
Dimensions	Net	445 (W) x 459 (H) x 243 (D) mm	
	Gross	514 (W) x 616 (H) x 315 (D) mm	
	Depth(head only)	100.5mm	
Weight	Net	9.0Kg	
	Gross	13.0Kg	

Environmental Conditions	Operating Temperature	0 to 40°C
	Operating Humidity	8 to 80%
	Storage Temperature	-20 to 60°C(max. temp at 29%RH)
	Storage Humidity	5 to 85%
Accessories	AC cord with Power Supply	1
	USB Upstream Cable	base -> host PC
	Analog VGA cable	1.8m
	3.5mm Stereo Mini to 3.5mm Stereo Mini PC Cable	1.8m
	3.5mm Stereo Mini to Dual RCA Cable	1.8m
	RCA to RCA composite Video Cable	1.8m
	Viewsonic CDRom	1
	VS Mac Adaptor	1
	VS User Guide	Multiple Language
	Portrait Software on CDRom	1
Regulatory Standards	UL, CSA, FCC B, CB, ISO9241-3, ISO13406-1, CE, DOC-B EPA, NOM, TUV/GS, TUV/ERGO, MPRII, TCO99, E2000 NEMKO, DEMKO, SEMKO, FIMKO, Estonia, Lithuania, PCT, SASO, S. Africa, VCCI, BCIQ, CCIB, S-Mark, C-Tick, EMI-B(korea)	
Others	Tilt Angle 30° up / 5° down Swivel -45° / +45° Height Adjust 60mm Power Save System (VESA) User Control by On Screen Display(base only) VESA DDC1/2B compatible (head DDC2B only) Cabinet Material – GE GP7351 Color code Y0487	

3. Electrical Characteristics

Power Supply

3.1.1 AC Input (AC Adapter)

Input Voltage	AC90-264V
Frequency	47 / 63Hz
Power Consumption:	
65W (typ)	on mode
less than 8W	power save mode
Current Rating	1.0A @ AC100-240V

3.1.2 DC Input

Input Voltage	DC 12 V
Current Rating	5.0A

3.2 LCD

LCD	In-Plane Switch Active matrix (TFT)
Effective display size	359.0 (H) x 287.2 (V) mm (typ) 18.1" / 46 cm diagonal
Pixel number	1280 x 1024 pixels
Color filter arrangement	R.G.B. vertical stripe
Display method	TFT, normally black
Drive method	In-Plane Switch Active matrix (TFT)
Dot pitch	0.092 (H) x 0.281 (V) mm
Pixel pitch	0.281 (H) x 0.281 (V) mm
Dot number	1280 x 1024 x 3 dots
Backlight	Edge-lighting type with 6 CCFTs (Cold Cathode Fluorescent Tube)
Brightness	200 cd / m ² (min: center / all white)
Contrast ratio	200:1 (min)
Display color	16,777,216
Minimum viewing angle	Up 60° / down 60° / right 60° / left 60° (Contrast ratio>10 at Ta=25°C, 77°F)
Response time	25 msec (Typical)

3.3 Interface Signals

3.3.1 RGB Video Signals

3.3.1.1 Separate Sync. Signals

Analog R,G,B	0 - 0.7 Vp-p
Signal Level	75 ± 5%
Sync Level	TTL level
Sync Polarity	independent

3.3.1.2 Sync On green(serrated XGA only), Composite Sync

3.3.2 Composite Video Signals

3.3.2.1 Video type

NTSC, PAL, SECAM

3.3.3 Audio Signals

3.3.3.1 Audio Input Ports

2channels x 2

3.3.3.2 Speakers

2W(max.) x 2

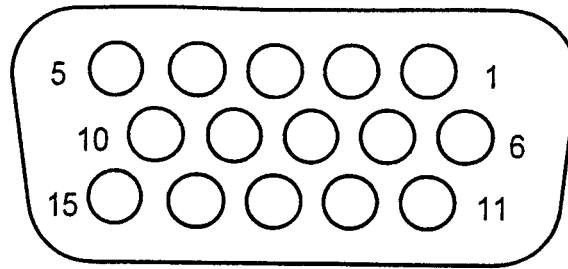
3.3.4 Input Signal Connectors

3.3.4.1 RGB Video Input : 15 pin mini D-sub Port A

PIN NO.	Separate Sync
1	RED
2	GREEN
3	BLUE
4	GROUND
5	GROUND
6	GROUND
7	GROUND
8	GROUND
9	Tx
10	GROUND
11	Rx
12	SDA
13	H.SYNC
14	V.SYNC
15	SCL

Port B

PIN NO.	Separate Sync
1	RED
2	GREEN
3	BLUE
4	GROUND
5	GROUND
6	GROUND
7	GROUND
8	GROUND
9	No connection
10	GROUND
11	No connection
12	SDA
13	H.SYNC
14	V.SYNC
15	SCL



3.3.4.2 Composite Video Connector RCA jack x 1, S-video x 1 (Not individually selectable)

3.3.4.3 Audio Connector

3.5mm Stereo jack x 2,

3.5mm Microphone Passthrough jack x 2

3.3.5 Signal Timing

3.3.5.1 Timing Mode

10 Timing Mode Memory, circular use when new mode detected

3.3.5.2 Timing mode Change

maximum time for mode Change 10 sec.

3.3.5.3 Signal Timing Table

The factory test input video signal is defined as the following table:

Preset No.	H.sync Frequency	V.sync Frequency	SYN	POL.	Video Mode	Description
			H-SYN	V-SYNC		
MOD [1]	31.469 ±0.5KHz	70.0 ±1.5Hz	+	-	640X400(70)	IBM VGA
MOD [2]	31.469 ±0.5KHz	59.94 ±1.5Hz	-	-	640X480(60)	VESA STANDARD
MOD [3]	34.97 ±0.5KHz	66.67 ±1.5Hz	-	-	640X480(66)	MAC
MOD [4]	37.86 ±0.5KHz	72.81 ±1.5Hz	-	-	640X480(72)	VESA STANDARD
MOD [5]	37.5 ±0.5KHz	75.0 ±1.5Hz	-	-	640X480(75)	VESA STANDARD
MOD [6]	35.16 ±0.5KHz	56.0 ±1.5Hz	+	+	800X600(56)	VESA STANDARD
MOD [9]	37.88 ±0.5KHz	60.0 ±1.5Hz	+	+	800X600(60)	VESA STANDARD
MOD [10]	48.077 ±0.5KHz	72.0 ±1.5Hz	+	+	800X600(72)	VESA STANDARD
MOD [11]	46.875 ±0.5KHz	75.0 ±1.5Hz	+	+	800X600(75)	VESA STANDARD
MOD [12]	49.72 ±0.5KHz	74.5 ±1.5Hz	-	-	832X624(75)	MAC
MOD [13]	48.363 ±0.5KHz	60.0 ±1.5Hz	-	-	1024X768(60)	VESA STANDARD
MOD [14]	56.476 ±0.5KHz	70.0 ±1.5Hz	-	-	1024X768(70)	VESA STANDARD
MOD [15]	60.023 ±0.5KHz	75.0 ±1.5Hz	+	+	1024X768(75)	VESA STANDARD
MOD [16]	54.348 ±0.5KHz	60.05 ±1.5Hz	+	+	1152X864(60)	VESA STANDARD
MOD [17]	63.851 ±0.5KHz	70.01 ±1.5Hz	+	+	1152X864(70)	VESA STANDARD
MOD [18]	67.5 ±0.5KHz	75.0 ±1.5Hz	+	+	1152X864(75)	VESA STANDARD
MOD [19]	60.00 ±0.5KHz	60.0 ±1.5Hz	+	+	1280X960(60)	VESA STANDARD
MOD [20]	63.981 ±0.5KHz	60.02 ±1.5Hz	+	+	1280X1024(60)	VESA STANDARD
MOD [21]	79.976 ±0.5KHz	75.0 ±1.5Hz	+	+	1280X1024(75)	VESA STANDARD
MOD [22]	75.000 ±0.5KHz	60.0 ±1.5Hz	+	+	1600X1200(60)	VESA STANDARD
MOD [23]	81.250 ±0.5KHz	65.0 ±1.5Hz	+	+	1600X1200(65)	VESA STANDARD

MOD [24]	87.500 ±0.5KHz	70.0 ±1.5Hz	+	+	1600X1200(70)	VESA STANDARD
MOD [25]	93.750 ±0.5KHz	75.0 ±1.5Hz	+	+	1600X1200(75)	VESA STANDARD

3.4 Luminance Control

Analog signal (6500K)

under 50 cd / m² (@ Cont / Bright / Backlight min)

over 200 cd / m² (@ Cont / Bright / Backlight max)

Digital signal

over 200 cd / m² (@ Backlight max)

3.5 Synchronization

Horizontal: 30 to 95 kHz

Vertical: 50 to 75 Hz Non-interlaced

maximum 75Hz @ 1600 x 1200 mode

Recommended 60Hz @ 1280 x 1024 mode

3.6 Display Characteristics

3.6.1 Picture Size

Horizontal Width 359.0 mm (typical)

Vertical Width 287.2 mm (typical)

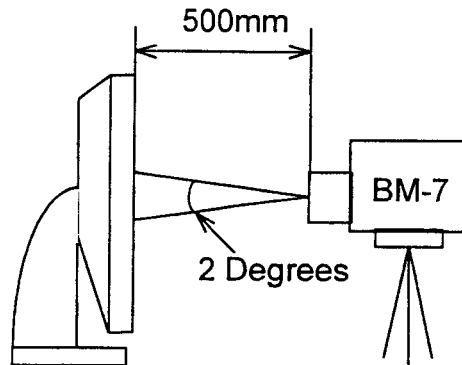
3.6.2 Optical Characteristics

General qualities: The following data was measured by BM7 of TOPCON
data are panel optical data, for analog signal there are +- 5% tolerance.

Item	Code		Conditions	Min.	Typ.	Max.	Unit
Contrast	CR		White/Black at Image Center	200	300	-	-
White Brightness	L VMAX		Whole White	200	235	-	cd / m ²
Uniformity of Brightness			Bmax or Bmin -Bave Bave	-	-	1.3	ms ms
Response	Tpd		All White to All Black All Black to All White	-	25 25	-	
Viewing Angle	Right	R	Center *CR>10	60	80	-	Degree
	Left	L		60	80	-	Degree
	Up	H		60	80	-	Degree
	Down	L		60	80	-	Degree
Luminance control			All White(digital signal or analog 6500k) Brightness at center of display surface	< 50 (cont / bright backlight min) >=200 (cont / bright backlight max)			Cd / m ²

These characteristics were measured under the following conditions:

Temperature:	77 ± 6°F, 25 ± 5°C
Viewing angle:	AU = 0°, AR = 0°
Warm Up time:	minimum 30 minutes
Measuring instrument:	TOPCOM BM-7 Luminance Meter
Measuring distance:	500 mm
Measuring angle:	2°

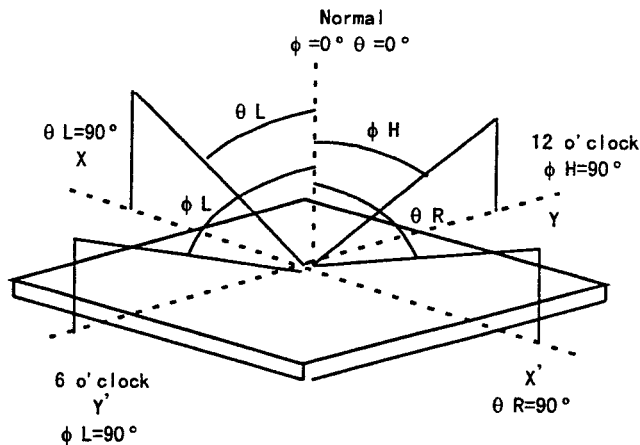


Notes:

(Note 1) Contrast ratio is defined as the following formula.

$$\text{Contrast ratio} = \frac{\text{Brightness(Luminance) with all pixels at "white"}}{\text{Brightness with all pixels at "black"}}$$

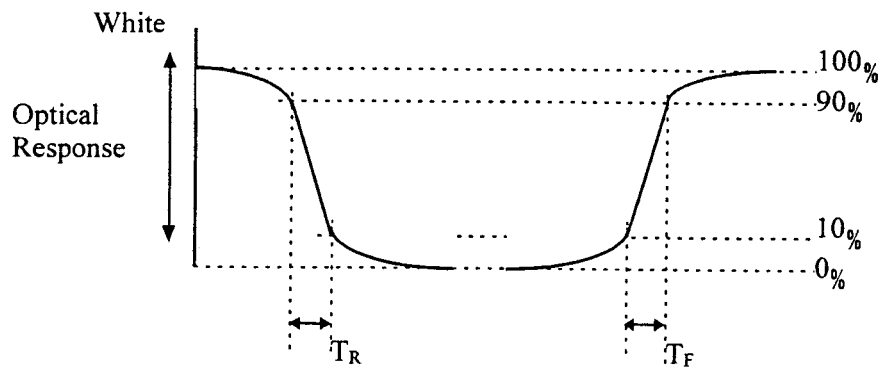
(Note 2) Viewing angle is measured as follows:



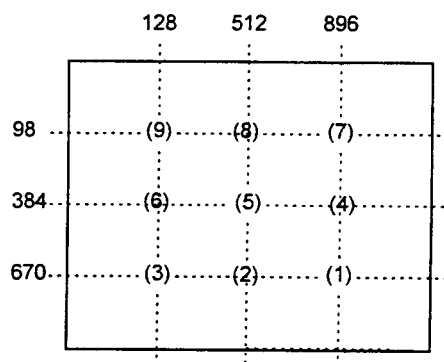
(Note 3) Definition of response time is as follows:

Response time is measured when the display data is changed from white to black.

White(TFT OFF)	Black(TFT ON)	White(TFT OFF)
----------------	---------------	----------------



(Note 4) Judge points for brightness uniformity
Brightness uniformity is judged at five (5) points on display area:



$$BUNI = \frac{|B_{max} \text{ or } B_{min} - B_{ave}|}{B_{ave}}$$

B_{max} : Maximum Brightness

B_{min} : Minimum Brightness

$$B_{ave} : \text{Average Brightness} = \frac{\sum (B(k))}{9}$$

3.6.3. Defect, Scratch and Dust

TEST CONDITION

(1) INSPECTED AREA

- i) The distance between inspector's eyes and the module is around 350-500mm.

(2) ENVIRONMENT

- i) Ambient Temperature : 20 to 25degrees C
- ii) Illumination for inspection should be around 300 to 700 [lx] during module operation
- iii) Back-light is powered on at max luminance, greater than 100[cd/m2], during inspection for module operation

COSMETIC SPECIFICATION

1. Visual screen

Operating inspection

Polarizer Scratch/Bubble	Size (mm)		Allowable maximum counts
Elliptical defects	$d < 0.2$		Disregarded
	$0.2 \leq d < 0.4$		5
	$0.4 \leq d$		0
Linear defects	$w < 0.07$		Disregarded
	$0.07 \leq w < 0.10$	$l < 3.0$	5
	$0.10 \leq w$		0

d : diameter $d = (\text{longaxis} + \text{shortaxis}) / 2$ w : line width , l : line length

2. Line defects

No visible line defect is allowed in entire screen.

A line defect is defined as a horizontal and vertical apparent line, visible through 5% ND-filter, that differs from adjacent lines at any gray raster pattern.

3. Bright and black dots

Any bright dot	10 Max
Bright and black dot (total)	15 Max
2 adjacent dot pair	3 max
3 adjacent dot triple	Not allowed

IMAGE STICKING Spec.

Condition : 25 degree C, 10 hour operation with a fixed image

Specification : none image sticking at 2hrs after image changing to windows default

3.7 Power Management

MD-810BPV will enter power saving mode under the following conditions:

Power Management condition and status

State		Signals		Power	Video	LCD	LED
	Horizontal	Vertical	Video	Supply	Circuit		
On	Pulses	Pulses	Active	On	On	On	Green
Stand-by	No Pulses	Pulses	Blanking		Off	Off	Amber
Suspend	Pulses	No Pulses					
Off	No Pulses	No Pulses					
Complete	N/A	N/A	N/A	Off			Off

3.8 FullScan Capability

When the input display mode is not 1280x1024, the image area is changed as follows:

Flex Scan Mode	Input display		Expanded Rate		Expanded Resolution
	Mode	Resolution	Horizontal	Vertical	
Expansion 1		640x350	2	2.93	1280x1024
Expansion 2		640x400	2	2.56	1280x1024
Expansion 3		640x480	2	2.13	1280x1024

Expansion 4		720x400	1.78	2.56	1280x1024
Expansion 5		800x600	1.6	1.71	1280x1024
Expansion 6		832x642	1.54	1.6	1280x1024
Expansion 7		1024x768	1.25	1.33	1280x1024
Expansion 8		1152x864	1.11	1.85	1280x1024
Standard		1280x1024	1	1	1280x1024
Contraction1		1600x1200	0.8	0.85	1280x1024

4. Mechanical Characteristics

4.1 Dimensions

Net: 445 (W) x 459 (H) x 243 (D) mm

Gross: 514 (W) x 616 (H) x 315 (D) mm

4.2 Weight

Net: 9.0Kg

Gross: 13.0 Kg

4.3 Base Rotation

Tilt: up 30 ° / down 5 °

Swivel: left 45 ° / right 45 °

4.4 Labeling

4.4.1 Bottom Label on Base

Material: PC

Thickness: t 0.254

Color: Gray (same as plastic color) / Black (Letter)

Size: 162 (W) x 74 (H) mm

Location: Bottom Label on Base side

Block Copy: ViewSonic.

Contents: Appendix III

4.4.2 LABEL (AC ADAPTER)

Material: Polyester's

Thickness: t0.15

Color: Black (Base color) / Mist White (letter)

Size: 41 (W) x 91 (H) mm

Location: BOTTOM OF AC ADAPTER

Block Copy: DELTA ELECTRONICS, INC. AND ViewSonic

Contents: Appendix III

4.4.3 Bar Code Number Label (Carton Box)

Material: Art Paper

Color: White (Base) / Black (Letter)

Size: 76 (W) X 76 (H) mm

Location: Carton Box (Side Wall)

Contents: Appendix III

4.4.4 Serial Number Label (Rear Back Label)

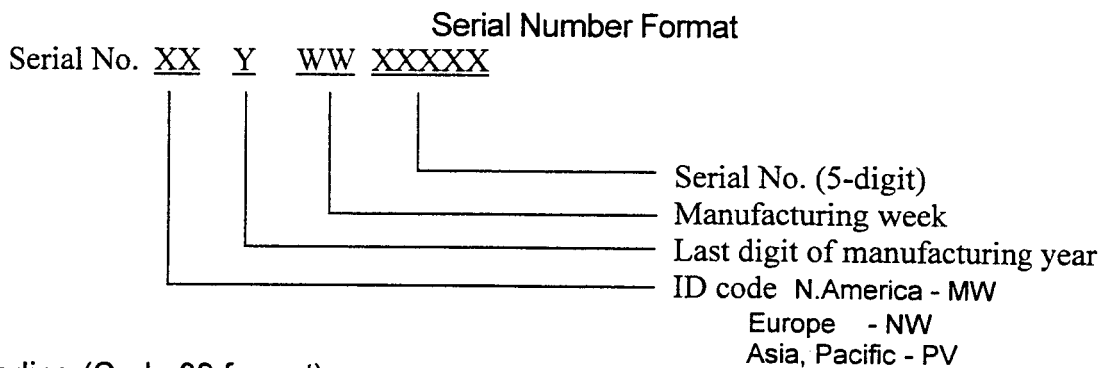
Material: Art Paper

Color: White (Base) / Black (Letter)

Size: 23 (W) X 4.5 (H) mm

Location: Paste on Rear Back Label

- Contents: Appendix III
- 4.4.5 Serial Number Label (Paste on Base ID Label)
- Material: Art Paper
- Color: White (Base) / Black (Letter)
- Size: 53 (W) X 10 (H) mm
- Location: Paste on Base ID Label
- Contents: Appendix III
- 4.4.5 Rear Back Label (Paste on Rear Back)
- Material: Art Paper
- Color: Gray (same as plastic color) / Black (Letter)
- Size: 176 (W) X 26.6 (H) mm
- Location: Rear Back Label
- Contents: Appendix III



UPC Coding (Code 39 format)

N. America – 766907 13331 8

Europe – 766907 14331 7

Asia,Pacific – 766907 15321 7

5. Packaging

5.1 Carton Box

Dimensions: 515(W) x 615(H) x 315(D) mm

Color: Background Brown & PANTONE 1935U

Printing Black

Material: 350#AB-FLUTE or Equivalent, double wall

6. Environmental Characteristics

6.1 Operating Conditions

Temperature: 0 Through + 40° C

Humidity: 8% To 80%

Altitude: 0 – 3,000 Meter

6.2 Non-operating Conditions

Temperature: -20 Through +60 ° C

Humidity: 5% To 95% (39 degree welt bulb)

Altitude: 0 – 12,000 meter

7. Factory setting

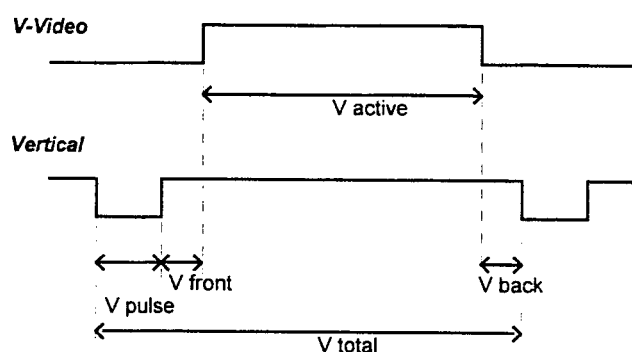
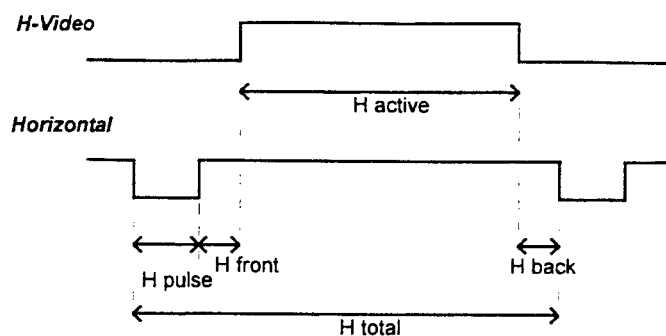
7.1 OSD

Brightness	70%(based on 0-100%)
Contrast	100%(based on 0-100%)
Hue	50%(based on 0-100%)
Saturation	50%(based on 0-100%)
AutoTune	Executed
Color Temperature	6500k
Audio source	port 1
Volume	50%
Balance	50%
Bass/Treble	50%
OSD Timeout	15 Sec
Language	English
OSD position	Center
Scaling	Fill all
PIP	OFF
PIP Position	Left-Upper
Gamma	Level 2 (mid position)

7.2 Power Switch

OFF

Appendix I Preset Signal Timings



	Mode	1	2	3	4
signal name	Symbol	Dos-text	VGA	MAC 14"	VGA
H-frequency(khz)		31.469	31.469	35	37.861
V-frequency(hz)		70.087	59.94	66.667	72.809
Pixel rate(mhz)		25.175	25.175	30.24	31.5
H-sync	Ths	96	96	64	40
H-back porch	Thb	48	48	96	128
H-total	Thd	800	800	864	832
H- front porch	Tv	16	16	64	24
V-sync	Tvs	2	2	3	3
V-back porch	Tvb	35	33	39	28
V-total	Tvd	449	525	525	520
V-front porch	Tvf	10	10	3	9
H-sync. Polarity		Negative	Negative	Negative	Negative
V-sync Polarity		Positive	Negative	Negative	Negative
H-resolution(dots)		640	640	640	640
V-resolution(lines)		400	480	480	480

	mode	5	6	7	8
signal name	symbol	VGA	SVGA	SVGA	SVGA
H-frequency(khz)		37.5	35.156	37.879	48.077
V-frequency(hz)		75	56.25	60.317	72.188
Pixel rate(mhz)		31.5	36	40	50
H-sync	Ths	64	72	128	120
H-back porch	Thb	120	128	88	64
H-total	Thd	840	1024	1056	1040
H- front porch	Tv	16	24	40	56
V-sync	Tvs	3	2	4	6
V-back porch	Tvb	16	22	23	23
V-total	Tvd	500	625	628	666
V-front porch	Tvf	1	1	1	37
H-sync. Polarity		Negative	Positive	Positive	Positive
V-sync Polarity		Negative	Positive	Positive	Positive
H-resolution(dots)		640	800	800	800
V-resolution(lines)		480	600	600	600

	mode	9	10	11	12
signal name	symbol	SVGA	MAC 16"	XGA	XGA
H-frequency(khz)		46.875	49.725	48.363	56.476
V-frequency(hz)		75	74.5	60.004	70.069
Pixel rate(mhz)		49.5	57.283	65	75
H-sync	Ths	80	64	136	136
H-back porch	Thb	160	224	160	144
H-total	Thd	1056	1152	1344	1328
H- front porch	Tv	16	32	24	24
V-sync	Tvs	3	3	6	6
V-back porch	Tvb	21	39	29	29
V-total	Tvd	625	667	806	806
V-front porch	Tvf	1	1	3	3
H-sync. Polarity		Positive	Negative	Negative	Negative
V-sync Polarity		Positive	Negative	Negative	Negative
H-resolution(dots)		800	832	1024	1024
V-resolution(lines)		600	624	768	768

	mode	13	14	15	16
signal name	symbol	XGA	SXGA	SXGA	SXGA
H-frequency(khz)		60.023	54.348	63.851	67.5
V-frequency(hz)		75.029	60.053	70.012	75
Pixel rate(mhz)		78.75	80	94.5	108
H-sync	Ths	96	96	96	128
H-back porch	Thb	176	192	200	256
H-total	Thd	1312	1472	1480	1600
H- front porch	Tv	16	32	32	64
V-sync	Tvs	3	3	3	3
V-back porch	Tvb	28	37	44	32
V-total	Tvd	800	905	912	900
V-front porch	Tvf	1	1	1	1
H-sync. Polarity		Positive	Positive	Positive	Positive
V-sync Polarity		Positive	Positive	Positive	Positive
H-resolution(dots)		1024	1152	1152	1152
V-resolution(lines)		768	864	864	864

	mode	17	18	19	20
signal name	symbol	SXGA	SXGA	SXGA	UGA
H-frequency(khz)		60	63.981	79.976	75
V-frequency(hz)		60	60.02	75.025	60
Pixel rate(mhz)		108	108	135	162
H-sync	Ths	112	112	144	192
H-back porch	Thb	312	248	248	304
H-total	Thd	1800	1688	1688	2160
H- front porch	Tv	96	48	16	64
V-sync	Tvs	3	3	3	3
V-back porch	Tvb	36	38	38	46
V-total	Tvd	1000	1066	1066	1250
V-front porch	Tvf	1	1	1	1
H-sync. Polarity		Positive	Positive	Positive	Positive
V-sync Polarity		Positive	Positive	Positive	Positive
H-resolution(dots)		1280	1280	1280	1600
V-resolution(lines)		960	1024	1024	1200

	mode	21	22	23
signal name	symbol	UGA	UGA	UGA
H-frequency(khz)		81.25	87.5	93.75
V-frequency(hz)		65	70	75
Pixel rate(mhz)		175.5	189	202.5
H-sync	Ths	192	192	192
H-back porch	Thb	304	304	304
Count num(H-total)	Thd	2160	2160	2160
H- front porch	Tv	64	64	64
V-sync	Tvs	3	3	3
V-back porch	Tvb	46	46	46
Count num(V-total)	Tvd	1250	1250	1250
V-front porch	Tvf	1	1	1
H-sync. Polarity		Positive	Positive	Positive
V-sync Polarity		Positive	Positive	Positive
H-resolution(dots)		1600	1600	1600
V-resolution(lines)		1200	1200	1200

Appendix II EDID Code

analog

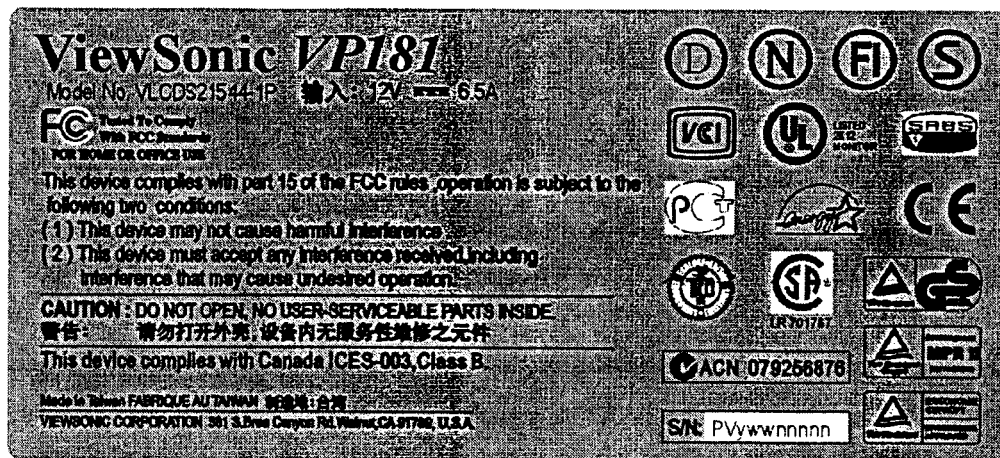
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	5A	63	4D	57	06	00	00	00
10	29	09	01	02	0F	24	1B	BA	EB	5E	82	A3	53	46	98	24
20	11	48	4F	BF	FF	80	31	0F	45	4F	61	4F	71	4F	81	40
30	81	8F	A9	40	A9	4F	30	2A	00	98	51	00	2A	40	30	70
40	13	00	65	0C	11	00	00	1E	00	00	00	FF	00	4D	57	39
50	34	31	30	30	30	30	36	0A	20	20	00	00	00	FD	00	32
60	4B	1E	5F	15	00	0A	20	20	20	20	20	20	00	00	00	FC
70	00	56	50	31	38	31	0A	20	20	20	20	20	20	20	00	46

digital

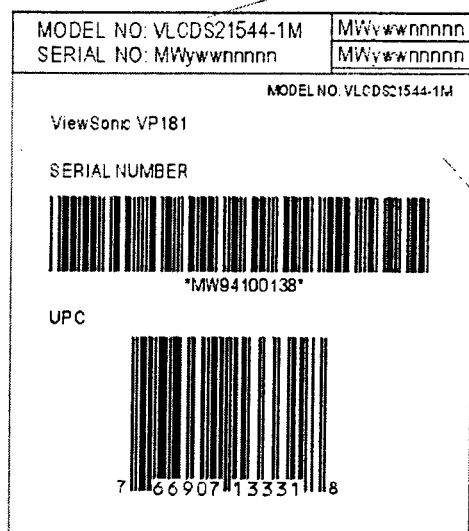
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	5A	63	4D	57	06	00	00	00
10	29	09	01	02	80	24	1B	BA	EA	5E	82	A3	53	46	98	24
20	11	48	4F	00	00	00	81	80	01	01	01	01	01	01	01	01
30	01	01	01	01	01	01	30	2A	00	98	51	00	2A	40	30	70
40	13	00	65	0C	11	00	00	1E	00	00	00	FF	00	4D	57	39
50	34	31	30	30	30	30	36	0A	20	20	00	00	00	FD	00	32
60	3C	1E	40	0B	00	0A	20	20	20	20	20	20	00	00	00	FC
70	00	56	50	31	38	31	0A	20	20	20	20	20	20	20	00	33

Appendix III Label Printing

ID LABEL ON BASE



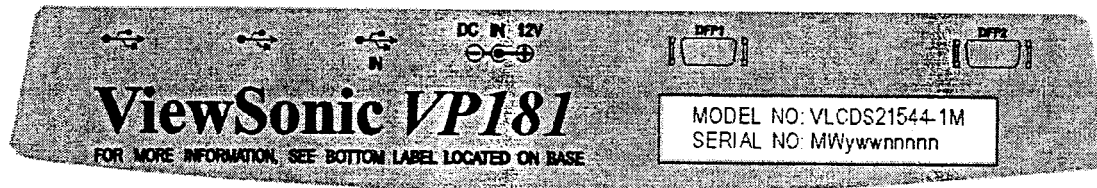
SERIAL NO. LABEL (PASTE ON REAR BACK)



SERIAL NO. LABEL (PASTE ON ID LABEL ON BASE)

BAR CODE LABEL (PASTE ON CARTON)

REAR BACK LABEL



ADAPTER LABEL

ViewSonic

ADAPTOR ADP-80AB REV.B



91-57316

DELTA ELECTRONICS (DONGGUAN) CO., LTD.

INPUT : AC 100-240V 103-108VA 50-60Hz

OUTPUT : 12V === 6.67A

INPUT : 100-240V ~ 1.4A

CAUTION:

For use with Information Technology Equipment.

ATTENTION:

Pour Matériel Informatique Technologie.

Apparaten skall anslutas till jordat uttag

när den ansluts till ett nätverk.



LISTED
ITE. POWER SUPPLY

CONTROL CODE:

S/N:

PATENTS PENDING.

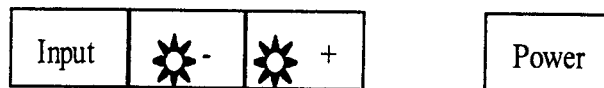
MADE IN CHINA.

CM-1

Section 2 - Front Panel Control Description



User control functions
Head control buttons :



1. press power button to power on the LCD monitor. LED in the power button will turn green
2. press brightness + button to increase the backlight luminance.
3. press brightness – button to decrease the backlight luminance.
4. press input button to toggle the digital input port signal to display.

OSD operation flow

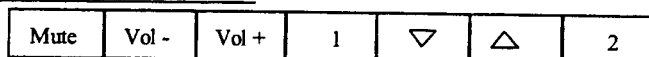
OnView® Main Menu

The following steps show how to access the **Main Menu**, **Submenus**, and controls within each **Submenu**. Details on the controls follow the steps listed below.

NOTE: Main menu shown below and menus on following pages are available only when connected to an analog source. Digital source uses only the brightness control on ViewPanel head (see the “Head Control Buttons” for location of brightness control).

Any OSD setting will save only after the user totally exits the OSD menu.

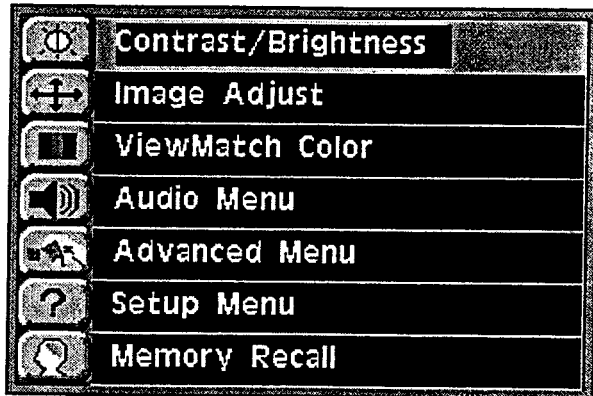
Base control buttons



- 1 Press the [1] button to display the Main Menu shown below.
- 2 Press the [▼] or [▲] button to scroll to the desired menu option.

- 3 Press the [2] button to select the menu option.
- 4 Press the [▼] or [▲] button to select submenu option.
- 5 After making adjustments, press the [1] button to exit the screen to save the OSD changes.

Main Menu



[1]:EXIT

[2]:SELECT

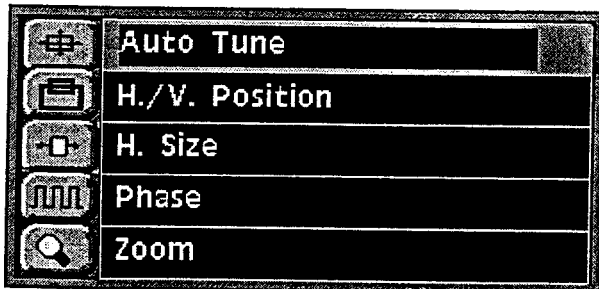
Contrast adjust foreground white level of screen image.

[▲] increase contrast, [▼] decrease contrast.

Shortcut: Before displaying the OnView menu, press the [▼] or [▲] button to adjust. Press button [2] to toggle between brightness and contrast.

Brightness adjusts background black level of screen image.

Image Adjust



[1]:EXIT

[2]:SELECT

[▲] increase brightness, [▼] decrease brightness.

Image Adjust Menu

Auto Tune automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image.

NOTE: Auto tune works with most common video card. If using the function does not work on your ViewPanel®, Lower the video refresh rate to 60 Hz and try again. (See computer or graphic card user guide to adjust refresh rate.) The panel may be manually tuned using the horizontal and vertical phase controls shown below.

H/V Position Press the [2] button to select H. or v. Position

Horizontal Position moves screen image left or right.

[▲] move screen image to *left*, [▼] moves screen image to *right*.

Press the [2] button to toggle between H. or V. Position.

Vertical Position moves screen image up or down.

[▲] move screen image *down*, [▼] moves screen image *up*.

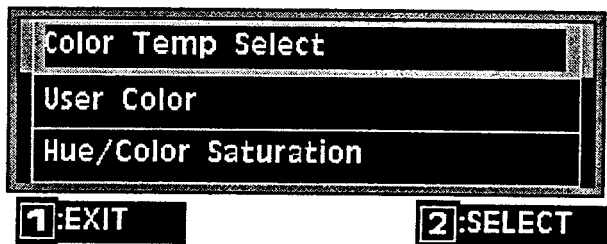
Horizontal size adjusts the width of screen image. [▼] decreases Width of screen image, [▲] increases width of image.

Phase fine tunes the video distortion. Press [▼] or [▲] to adjust to user preference.

Zoom magnifies the displayed image. Press the [2] button to change the center of magnification.

Press [▼] and [▲] at the same time to restore magnification to original (unmagnified) condition.

ViewMatch Color



ViewMatch® Color Menu

Color Temp Select provides four preset color adjustment: 9300K, 6500K, 5400K, 5000K for improved brightness and color saturation. Press button [2] to select the preset color. Press button [▼] or [▲] to fine tune the color response.

9300K—Adds blue to screen image for cooler white (used in most office settings with fluorescent lighting).

6500K—Adds red to screen image for warmer white and richer red.

5400K—Adds green to screen image for a darker color.

5000K—Adds blue and green to screen image for a darker color.

User color—Individual adjustments for red (R), green (G), blue(B).

1 To adjust selected color, press [▼] or [▲].

2 Press button [2] to set adjustment and select next color to adjust.

Hue/Color Saturation can be adjusted by using the following controls.

Press [▼] or [▲] to scroll to hue or color saturation.

Press button [2] to select hue, or color saturation.

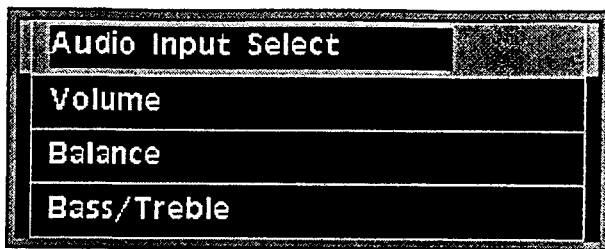
NOTE: This option is not available in RGB (computer) mode, and only affects composite video sources.

Hue adjusts the brightness of the video color. Press [▼] to increase red. Press [▲] to increase blue.

Color Saturation adjusts the lightness of the screen image. Press [▲] to make flesh tones become more green. Press [▼] to make flesh tones become more red

Audio Menu

Audio Menu



1:EXIT

2:SELECT

AUDIO INPUT SELECT selects which audio input to be active.

VOLUME increase the volume, decreases the volume, and mutes the audio.

BALANCE adjusts the proportion of sound coming from each speaker.

[t] directs more of the sound to the first speaker, [s] directs more of the sound to the second speaker.

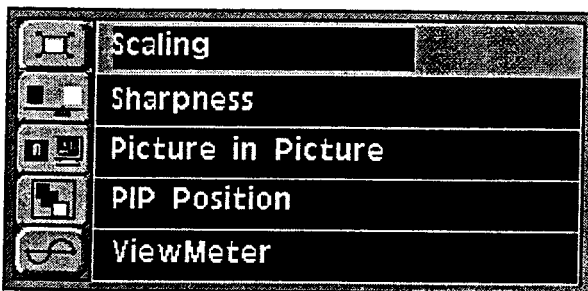
Bass/Treble adjusts the high (treble) and low (bass) frequency audio output.

Press [▼] or [▲] to adjust treble.

Press [2] button to select bass adjustment.

Press [▼] or [▲] to adjust bass.

Advanced Menu



1:EXIT

2:SELECT

Advanced Menu

Scaling adjusts the video input signal to the screen size using the following options. Press [▼] or [▲] to select from the following options:

Fill all adjusts the video signal to fill the screen.

Fill Aspect Ratio maintains the correct video signal proportions for different resolutions.

1:1 adjusts the video signal so that the height and width of the picture are the same.

Sharpness adjusts the clarity of a non-XGA (1024 x 768) RGB signal. Press [▼] or [▲] to adjust.

Picture in Picture allows the user to review a composite video signal within the primary screen image.

Press [▼] or [▲] to adjust the size of the picture from the following options: Small, Medium, or Large.

PIP Position allows the user to place the Picture-in-Picture window anywhere on the screen. Press [▼] or [▲] to select from the following:

H. Adj moves the second video signal horizontally.

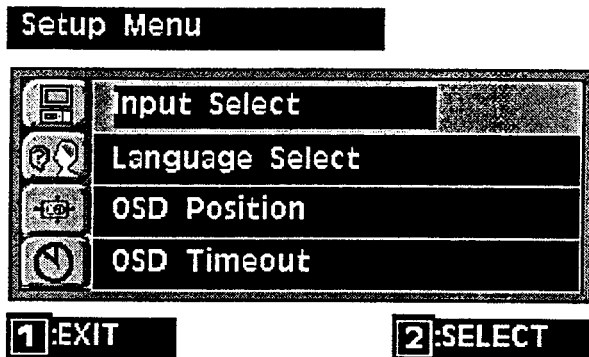
[t] moves second signal to left, [s] moves second signal to right.

V. Adj moves the second video signal vertically.

[t] moves second signal down, [s] moves second signal up.

ViewMeter® displays information regarding the current input signal coming from the graphics card in your computer.

NOTE: See your graphics card user guide for more information about changing the resolution and refresh rate.



Setup Menu

Input Select allows the user to select the current signal from the following choices: two analog RGB (15 pin) inputs, or a composite video input. Press [▼] or [▲] to select from video A, B, or composite input.

Language Select allows the user to choose from available languages.

OSD Position Press the [▼] or [▲] button to select the horizontal or vertical OSD position.

Horizontal OSD Position horizontally repositions all On-Screen-Display (OSD) screens. [▼] moves OSD left, [▲] moves the OSD right.

Vertical OSD Position vertically repositions all On-Screen-Display (OSD) screens. [▼] moves OSD down, [▲] moves the OSD up.

OSD Timeout sets the length of time the OnScreen Display screen is displayed before exiting.

Memory Recall

Returns the adjustments back to factory settings (only if the ViewPanel® is operation in a factory preset mode).

Press the [2] button to select the Memory Recall menu option.

Section 3 - Circuit Description

Contents

A. Digital Head

1. Power Supply (DC/DC Converter)
2. Micro-Controller
3. Panel-link RECEIVER
4. USB HUB
5. DDC 2 B

B. Analog Base

1. Power Supply (DC/DC Converter)
2. Micro – Controller for power saving
3. Sync on green separator
4. Analog – to – Digital Converter
5. Multi-standard video decoder / scalar
6. Clock generator
7. Image processor
8. Panel-Link Transmitter
9. AUDIO AMPLIFIER
10. USB HUB
11. DDC 1 / 2 B

A. Digital Head

1. Power Supply (DC/DC Converter)

IC951 is a current mode switching regulator controller that drives an external N-channel power MOSFET (IC952) using a fixed frequency architecture (200KHz). It converts a 12.5V DC input voltage into regulated and stable output voltages of 5V respectively.

Pin2 (I_{TH} / RUN) provide a soft start point and run control inputs. During normal operating the voltage on the I_{TH} / RUN pin will vary from 1.19V to 2.4V depending on the load current. Pulling the I_{TH} / RUN pin up 0.8V(using C951 and R951) puts the IC951 to begin operation.

Pin7 (Boost) supply to the topside Floating Drivers. The bootstrap capacitor (C956) are returned to this pin.

Pin5 (SW1) are switch node connections to inductors. In step-down applications the voltage swing at this pin from a schottky diode (D951) drops below ground to VIN.

Pin6 (TG) is the output of a floating drive for top N-channel MOSFET (IC952). This is the output of a floating drive with a voltage swing equal to INTV_{cc} superimposed on the switch node voltage SW.

Pin1 (SENSE1 -) connect to the (-) input for the current comparator.

Pin3 (V_{FB}) receives the feedback voltage from an external resistive divider (R953 and C953) across the output.

2. Micro-Controller

IC301 is an 8-bit micro-controller (78E51). It plays a major role in the digital control of the LCD monitor. IC301 acts as a Key control , DPMS power saving control, auto-detect controller, and controller of IC602, 604 interface port.

Pin 2 and 4 are for connector detection.

Pin 8 enable IC603 (regulator)

Pin6 announce the analog board that the panel is open

Pin10 acts as a reset pin of the Micro-Controller for power on reset.

Pin 9 send a rest signal to IC701 HI→LOW→HI

Pin 24 send a HI signal when detect signal input
send a LOW signal when detect no signal input

Pin 25 is the input select

Pin 26 control the inverter on/off

Pin 27 control the panel on/off

Pin 28 detect IC602 have any signal in

Pin 29 detect IC604 have any signal in

Pin 30 IC602 action enable

Pin 31 IC604 action enable

Pin 43 detect panel on/off

Pin 41 add the brightness of panel

Pin 40 decrease brightness of panel

Pin 42 send a LOW signal when detect signal input
send a HI signal when detect no signal input

Pin 36,37,38 control IC303 for backlight voltage regulator

3. PANELLINK-RECEIVER

The SiI 151 uses panellink technology to supports displays ranging from VGA to SXGA (25-112 MHZ) the sil151 receiver supports up to true color panels(24bit/1pixel)in 1or 2 pixel/clock

HI→3.3V,LOW→0V

- Pin 44 output date clock
- Pin 46 output date enable
- Pin 48 H-sync output
- Pin 47 V-sync output
- Pin 100 clock polarity: latching on rising(LOW) or falling(HI) edge
- Pin 4 pixel select:2pixle(HI) 1pixle(LOW)
- Pin 3 output drive strength
- Pin 2 power down: normal(HI),power down(LOW)
- Pin 9 power down output: normal(HI),power down(LOW)
- Pin 8 sync detect: have sync(HI),no sync(LOW)
- Pin 1 output date format:TFT(HI),DSTN(LOW)
- Pin 90 TX0+& Pin 91 TX0-:BLUE
- Pin 85 TX1+& Pin 86 TX1-:GREEN
- Pin 80 TX2+& Pin 81 TX2-:RED
- Pin 93 RXC+& Pin 94 RXC-:CLOCK
- Pin 96 impedance matching control(400~680 Ω)
- Pin 99 RESERVED must be tied high
- Pin 18,29,43,57,78,6,38,67,97,82,84,88,95 POWER:HI
- Pin 19,28,45,58,76,5,39,68,98,79,83,87,89,92 GND:LOW
- Pin 49,50,51,52,53,54,55,56 :QO0~QO7
- Pin 59,60,,61,62,63,64,65,66 :QO8~QO15
- Pin 70,71,72,73,73,74,75,76,77 QO16~QO23
- Pin 10,11,12,13,14,15,16,17: QE0~QE7
- Pin 20,21,22,23,24,25,26,27:QE8~QE15
- Pin 30,31,32,33,34,35,36,37 QE16~QE23

DFP CONNECTOR PIN ASSIGNMENT & DESCRIPTION

Pin #	Signal name	Description	Pin #	Signal name	Description
1	Tx1+	TMDS positive difference output channel 1	11	Tx2+	TMDS positive difference output channel 2
2	Tx1-	TMDS negative difference output channel 1	12	Tx2-	TMDS negative difference output channel 2
3	Shield 1	Shield for TMDS channel 1	13	Shield 2	Shield for TMDS channel 2
4	Shield C	Shield for TMDS Clock	14	Shield 0	Shield for TMDS channel 0
5	TxC+	TMDS positive difference output reference clock	15	Tx0+	TMDS positive difference output channel 0
6	TxC-	TMDS negative difference output reference clock	16	Tx0-	TMDS negative difference output channel 0
7	Gnd	Logic gnd	17	Reserved	NC
8	+5V	Logic +5v Supply	18	HPD	Hot plug detection
9	Reserved	NC	19	DDC DATE	DDC2B date
10	Reserved	NC	20	DDC CLK	DDC2B CLK

5. USB Hub

IC 701 (KC82C160) is fully compliant with U.S.B specification rev 1.0 And supports dynamic attachment and removal , allowing peripherals to be Attached , configured , used , and detached while the host and other Peripherals are in operation.KC82C160 provides four downstream ports And one upstream port . it allows the hub to comprehend the following Downstream port states on a per-port basis : connect/disconnect detect, Port enable/disable, suspend/resume , reset and power switching. For Reasons of safety, KC82C160 implement an over-current detection over all Downstream ports on per-port basis.

NUMERICAL LISTING OF 44 PQFP PINS

Pin #	Pin name	Type	Description
1	Gnd	GND	GND
2	DP2	I/O	Downstream port 2 D2+
3	DM2	I/O	Downstream port 2 D2-
4	DP3	I/O	Downstream port 3 D3+
5	DM3	I/O	Downstream port 3 D3-
6	DP4	I/O	Downstream port 4 D4+
7	DM4	I/O	Downstream port 4 D4-
8	PCONGIG1	I	Port power configuration
9	GANG	I	Power switch/over-current detection
10	PWON1#	O	Downstream port power on/off control output port 1
11	PWON2#	O	Downstream port power on/off control output port 2
12	PWON3#	O	Downstream port power on/off control output port 3
13	PWON4#	O	Downstream port power on/off control output port 4
14	PCONGIG3	I	Port power configuration
15	PCONGIG2	I	Port power configuration
16	CPOUT	O	External analog voltage output
17	VCOIN	I	External analog voltage input
18	AVDD	PWR	Analog VDD
19	AGND	GND	Ground
20	PULL-DOWN	I	Test purpose only
21	RESERVE		N.C
22	VDD	PWR	VDD
23	GND	GND	Ground
24	XIN	I	External crystal interface input
25	XOUT	O	External crystal interface output
26	RESERVE		
27	RESERVE		
28	RESERVE		
29	RESERVE		
30	RESERVE		
31	PSTSIN1	I	Downstream port over-current detection input port 1
32	PSTSIN2	I	Downstream port over-current detection input port 2
33	VDD	PWR	VDD
34	GND	GND	Ground
35	PSTSIN3	I	Downstream port over-current detection input port 3
36	PSTSIN4	I	Downstream port over-current detection input port 4
37	RESET#	I	Chip master reset input
38	TEST#	I	Nand tree test input
39	RESERVE		
40	DP	I/O	Upstream port D+
41	DM	I/O	Upstream port D-
42	DP1	I/O	Downstream port 1 D1+
43	DM1	I/O	Downstream port 1 D1-
44	VDD_USB	PWR	VDD

IC702 and IC703 are over-current detectors. During an over-current condition, three things should happen: the downstream power must shut off immediately.

The host should be made aware of the source of the over-current. The status of the over-current port should be made available to the IC701 so that upon the host's request, this information can be reported to the host. Next, the host will initiate a downstream port disable to the misbehaving port.

The downstream power is automatically cut off by the IC701 when an over-current situation occurs. This updated over-current status will be reported by the IC701

6. DDC 2 B

IC401 & IC402 (24LC21A) can continuously transmit its extended identification, "EDID" using DDC1 communication channel. In addition, the monitor can respond to a request for EDID, or complete VDDIF, to be transmitted using DDC2, level B commands. Pin6 SCL is clock input for DDC 2B, pin5 SDA for data input, and pin7 VCLK is clock input for DDC1.

In DDC1 data transfer (UNI-directional mode), the VCLK input pin is used as an input clock for data transmission and SDA output pin is used as serial data line the SCL pin will hold high. The DDC2B node (BI-directional mode) BUS consists of two wires. SCL is for the data transmission clock and SDA is for the data line.

B. Analog Base

1. Power Supply (DC/DC Converter)

IC951 is a current mode switching regulator controller that drives an external N-channel power MOSFET (IC952) using a fixed frequency architecture (200KHz). It converts a 12.5V DC input voltage into regulated and stable output voltages of 5V respectively.

Pin2 (I_{TH} / RUN) provide a soft start point and run control inputs. During normal operating the voltage on the I_{TH} / RUN pin will vary from 1.19V to 2.4V depending on the load current. Pulling the I_{TH} / RUN pin up 0.8V(using C951 and R951) puts the IC951 to begin operation.

Pin7 (Boost) supply to the topside Floating Drivers. The bootstrap capacitor (C956) are returned to this pin.

Pin5 (SW1) are switch node connections to inductors. In step-down applications the voltage swing at this pin from a schottky diode (D951) drops below ground to VIN.

Pin6 (TG) is the output of a floating drive for top N-channel MOSFET (IC952). This is the output of a floating drive with a voltage swing equal to INTV_{cc} superimposed on the switch node voltage SW.

Pin1 (SENSE1 -) connect to the (-) input for the current comparator.

Pin3 (V_{FB}) receives the feedback voltage from an external resistive divider (R953 and C953) across the output.

2. Micro-Controller

IC616 is an 8-bit micro-controller (89C2051). It plays a major role in the digital control of the LCD monitor. IC616 acts as DPMS power saving control and sync on green detection. Pins 6,7 and 8 are for port A or port B DPMS detection.

Pin 2 is for IC501 DPMS power saving detection.
Pin 1 acts as a reset pin of the Micro-Controller for power on reset.
Pin 9 is used to communicate the sync on green port with IC501.
Pin 11 is used to communicate the main power on/off with digital board.
Pin 12 is for IC610 signal input detection (for video power saving use).
Pin 17 is used to communicate the power on/off with IC501.
Pin 1 is a reset signal of the USB board for power on reset.
Pin 15 is used to communicate the sync on green output on/off with IC604.

3. Sync On Green Separator

IC614 (EL4583CS) is a sync on green processor.
Pin 1 is a resistor (R660) RF connected between this pin and ground determines the input filter characteristic.
Pin 2 is a resistor and capacitor (R663 and C659) connected between this pin and ground determines the value of the min signal which will trigger the loss of signal output on pin 10.
Pin 3 is the composite sync output.
Pin 4 is the sync on green input.
Pin 10 is the digital level output which loss the sync on green input.

Pin 11 is that the current through the resistor and capacitor (R659,R678,C659) determines the timing of the functions within the IC. This include the sampling of the sync pulses 50% point, back porch output and the 2H eliminator.
Pin 7 is recommended to ac couple (C675) the output to pin 8.

4. Analog to Digital Converter

IC607 (AD9884AKS-140) is a complete 8-bit 140MSPS monolithic analog ADC with controllable amplifiers and clamps for the digitizing of large bandwidth RGB signals.

The clamp level, the gain and all of the other settings are controlled by IC501 via a serial interface pins 29 and 30.

IC607 also includes PLL circuits that can be locked on the horizontal line frequency and generates the ADC clock.

- Pins 7, 15, and 22 are analog Red, Green, Blue signal input. Pin 14 is the sync on green input. Pin 40 is for horizontal sync input, pin 41 for clock generator coast input, and pin 28 is external clamp input.
- Pin 118 is sync on green output.
- Pin 117 is the horizontal sync output.
- Pin 27 is the sampling clock inversion input from the IC501.
- Pin 126, 127 is the internal reference output and input.
- Pins 45 is PLL filter inputs.
- PLL clock output is pin 115, which is in phase with the internal ADC clock.
- Pin 125 is power off control input, meaning IC607 is in power-down mode when this pin is low.
- Pins 55 ~ 62, and 65 ~ 72 are blue channel ADC output signals.
- Pins 75 ~ 82, and 85 ~ 92 are green channel ADC output signals.
- Pins 85 ~ 102, and 105 ~ 112 are red channel ADC output signals.

5. Multi-standard video decoder / scalar

IC610 (KS0127) converts analog NTSC, PAL or SECAM video in composite, S-video, or component format to digitized component video. It also decodes Intercast, Teletext, closed caption, and SMPTE data with a built-in bit data slicer.

The clamp level, the gain and all of the other settings are controlled by IC501 via a serial interface pins 72 and 75.

- Pins 84 and 90 are S-video Y and C input. Pin 86 is the analog CVBS input.
- Pin 10 acts as a reset signal from the IC501.
- Pin 22, 23 and 26 is the odd field flag, horizontal and vertical sync output.
- PLL clock output is pin 21 to aligned to HAV signal.
- Pins 33 ~ 39, and 44 are blue channel ADC output signals.
- Pins 45 ~ 48, and 53 ~ 56 are green channel ADC output signals.
- Pins 16, 27, 28, 61 ~ 63, 68 and 78 are red channel ADC output signals.

6. Clock generator

IC506 (ICS501) and IC507 (ICS502) generate a high quality, high frequency clock output from a lower frequency crystal (22.11MHz).

IC507 pin7 (S1) and pin 6 (S0) are the digital level 'H' and 'L' that make sure the output clock (DCLK) to be 110.55MHz. This clock provides IC501 the display clock.

IC507 pin4 (S1) and pin 6 (S0) are the digital level 'H' and 'L' that make sure the output clock (MCLK) to be 132.66MHz. This clock provides IC501 the memory clock.

7. Image Processor

IC501 (PW364) is a highly integrated IC, producing real-time, scaled digital video or computer graphics images. Three separate data channels have been integrated into the PW364, allowing complete images to be resized using a single device. The RGB video ports support single width (24-bit) or double width (48-bit) pixel transfers. It also has sync separator circuitry, timing signal for PLL control, and clock buffering and conditioning circuitry.

The sync decoder detects and processes the horizontal sync, vertical sync, sync on green, and field inputs used for timing in the video port. It outputs a selected, separated horizontal sync for use by an external PLL.

The PLL control block generates the timing signals required for an external PLL. Coast is an output used to tell the PLL to coast during vertical blanking. This is used to keep the PLL from making spurious changes due to extra or missing horizontal sync pulses.

The CPU on the PW364 is an 8086 core with 80186 instruction set extensions. It is a 16-bit processor and it must be run at a clock rate between 20 and 50MHz. Pin NMI is the non-maskable interrupt to the processor. The interrupt is active high. The CPUEN is an active high input which must be high for the CPU to operate.

The vertical scalar takes pixel through a FIFO from the memory buffer and increases or decreases the number of lines. The graphic's pixel that output from the vertical scalar is sent to the horizontal scalar. The vertical scalar uses a 160-point FIR filter to operate on the data for the scaling operation. The horizontal scalar takes pixels from the vertical scalar and increases or decreases the number of pixels per lines. The pixels output from the horizontal scalar are sent to the display port. The horizontal scalar uses a 160-point FIR filter to operate on the data for the scaling operation.

The PW364 stores the graphics data in a FIFO for input to PW364 frame buffer memory.

The on screen display processor allows graphic overlay data to be placed on the screen for user interface and other functions. The on screen display can be applied to the data just after it is input to the chip or just before it is output. For the video and graphics ports, OSD data is 2 bits per pixel. The OSD has 4 functions, based on the value of the overlay data.

The PW364 supports the simultaneous capture and display of data from both the video and graphic ports. This mode called picture in picture.

8. Panel-Link Transmitter

IC513 (SiI150ACT100) is a high – speed digital video/graphics interconnect devices capable of supporting VGA to SXGA resolutions for TFT panels and DSTN LCD panel. IC513 operates from 25MHz ~ 86MHz. It receives parallel digital video data from a host graphics controller. Through the use of an internal PLL, the SiI150ACT100 encodes and serializes the parallel input data.

- Pin 80 is the display clock input from IC501.
- Pin 78 is the display data enable input from IC501.
- Pin 76,77 is the display horizontal and vertical sync input from IC501.
- Pin 24 is the data/control latching edge, 'H' level to indicates that input data will be latched on the rising edge and 'L' level to indicates that input data will b latched on the falling edge.
- Pin 26 is power off control input, meaning IC513 is in power-down mode when this pin is low.
- Pin 32 is a resistor (R539) to adjust the swing voltage.
- Pin 25 is the pixel select. The 'H' level indicates one pixel (up to 24 bits) per clock mode and the 'L' level indicates two pixels (up to 48 bits) per clock mode.
- Pin 34, 35, 39, 40, 42, 43, 45 and 46 is low voltage differential signal output data pairs.
- Pin 1~6, 9~16, 48~55, 58~65, 68~75 and 90~97 is the 48-bits digital data inputs from IC501 .
- Pin 20, 22, 23, 27, 28, 29, 87 must be tied high (+3.3V).
- Pin 22 must be tied low.

9. Audio processor&Amplifier

Audio processor:

IC801 (PT2313L) is an four-channel digital audio processor utilizing CMOS Technology .Volume , Bass , Treble , Balance , Front/Rear Fader Processor are incorporated into a single chip . Loudness function and Selectable input gain are also provided to build a highly effective electronic Audio processor having the highest performance and reliability with the Least external components. and all functions are programable using the IIC BUS

PIN#	PIN NAME	I/O	DESCRIPTION
1	REF	-	Analog reference voltage(1/2 VDD)
2	VDD	-	Supply input voltage
3	Agnd	-	Analog ground
4	Treb_L	I	Left channel input for treble control
5	Treb_R	I	Right channel input for treble control
6	RIN	I	Audio processor right channel input
7	Rout	O	Gain output&input selector for right channel
8	Loud_R	I	Right channel loudness input
9	Rin 3	I	Right channel input 3
10	Rin 2	I	Right channel input 2
11	Rin 1	I	Right channel input 1
12	Loud_L	I	Left channel loudness input
13	Lin 3	I	Light channel input 3
14	Lin 2	I	Light channel input 2
15	Lin 1	I	Light channel input 1
16	LIN	I	Audio processor left channel input
17	Lout	O	Gain output&input selector for left channel
18	Bin_L	I	Left bass controller input channel
19	Bout_L	O	Left bass controller output channel
20	Bin_R	I	Right bass controller input channel
21	Bout_R	O	Right bass controller output channel
22	RRout	O	Right rear speaker output
23	LRout	O	Left rear speaker output
24	RFout	O	Right front speaker output
25	LFout	O	Left front speaker output
26	Dgnd	-	Digital ground
27	Date	I	IIC Date
28	Clk	I	IIC Clk

IC 803 controls & regulates the voltage (12V to 9V) to the IC 801

O,S,D menu

Audio 1 means :

Right Volume signal through C807 into IC801 pin 10

Left Volume signal through C810 into IC801 pin 14

Audio 2 means :

Right Volume signal through C806 into IC801 pin 9

Left Volume signal through C809 into IC801 pin 13

Volume signal through IC801 pin22(right)pin23(left) into audio amplifier
IC802

Audio amplifier:

IC 802(TDA1517) is an integrated class-B dual output amplifier , It contains two identical amplifier differential input stages . the gain Of each amplifier is fixed at 20 dB .

Pins 1 and 9 are right and left channel inputs respectively. Pins 4 and 6 are right and left channel outputs which connect to two 8 OHM speakers.

Pin 8 is the mute/stand-by switch controlled by IC804

Pin 7 is the voltage input for IC802

10. USB Hub

IC 703 (KC82C160) is fully compliment with U.S.B specification rev 1.0
And supports dynamic attachment and removal , allowing peripherals to be
Attached , configured , used , and detached while the host and other
Peripherals are in operation.KC82C160 provides four downstream ports
And one upstream port . it allows the hub to comprehend the following
Downstream port states on a per-port basis : connect/disconnect detect,
Port enable/disable, suspend/resume , reset and power switching. For
Reasons of safety, KC82C160 implement an over-current detection over all
Downstream ports on per-port basis.

NUMERICAL LISTING OF 44 PQFP PINS

Pin #	Pin name	Type	Description
1	Gnd	GND	GND
2	DP2	I/O	Downstream port 2 D2+
3	DM2	I/O	Downstream port 2 D2-
4	DP3	I/O	Downstream port 3 D3+
5	DM3	I/O	Downstream port 3 D3-
6	DP4	I/O	Downstream port 4 D4+
7	DM4	I/O	Downstream port 4 D4-
8	PCONGIG1	I	Port power configuration
9	GANG	I	Power switch/over-current detection
10	PWON1#	O	Downstream port power on/off control output port 1
11	PWON2#	O	Downstream port power on/off control output port 2
12	PWON3#	O	Downstream port power on/off control output port 3
13	PWON4#	O	Downstream port power on/off control output port 4
14	PCONGIG3	I	Port power configuration
15	PCONGIG2	I	Port power configuration
16	CPOUT	O	External analog voltage output
17	VCOIN	I	External analog voltage input

18	AVDD	PWR	Analog VDD
19	AGND	GND	Ground
20	PULL-DOWN	I	Test purpose only
21	RESERVE		N.C
22	VDD	PWR	VDD
23	GND	GND	Ground
24	XIN	I	External crystal interface input
25	XOUT	O	External crystal interface output
26	RESERVE		
27	RESERVE		
28	RESERVE		
29	RESERVE		
30	RESERVE		
31	PSTSIN1	I	Downstream port over-current detection input port 1
32	PSTSIN2	I	Downstream port over-current detection input port 2
33	VDD	PWR	VDD
34	GND	GND	Ground
35	PSTSIN3	I	Downstream port over-current detection input port 3
36	PSTSIN4	I	Downstream port over-current detection input port 4
37	RESET#	I	Chip master reset input
38	TEST#	I	Nand tree test input
39	RESERVE		
40	DP	I/O	Upstream port D+
41	DM	I/O	Upstream port D-
42	DP1	I/O	Downstream port 1 D1+
43	DM1	I/O	Downstream port 1 D1-
44	VDD_USB	PWR	VDD

IC702 and IC703 are over-current detectors. During an over-current condition, three things should happen: the downstream power must shut off immediately.

The host should be made aware of the source of the over-current. The status of the over-current port should be made available to the IC701 so that upon the host's request, this information can be reported to the host. Next, the host will initiate a downstream port disable to the misbehaving port.

The downstream power is automatically cut off by the IC701 when an over-current situation occurs. This updated over-current status will be reported by the IC701

11. DDC ½ B

IC605, IC606 (24LC21A) can continuously transmit its extended identification, "EDID" using DDC1 communication channel. In addition, the monitor can respond to a request for EDID, or complete VDDIF, to be transmitted using DDC2, level B commands. Pin6 SCL is clock input for DDC 2B, pin5 SDA for data input, and pin7 VCLK is clock input for DDC1.

In DDC1 data transfer (UNI-directional mode), the VCLK input pin is used as an input clock for data transmission and SDA output pin is used as serial data line the SCL pin will hold high. The DDC2B node (Bi-directional mode) BUS consists of two wires. SCL is for the data transmission clock and SDA is for the data line.

Section 4 – Troubleshooting and Waveforms

Contents

A. Digital Head

A1. Figure of Waveform

A2. No Display on Screen (Screen is black, LED is off)

A3. No Display on Screen (Screen is black, LED is amber)

A4. No Display on Screen (Screen is black, LED is green)

A5. Abnormal Screen

A6. No CPU (IC301) Display

A7. No power on

A8. USB not work

B. Analog Base

B1. Figure of Waveform

B2. No Display on Screen (Screen is black, LED is amber)

B3. No Display on Screen (Screen is black, LED is green)

B4. Abnormal Screen

B5. Image Processor (IC501) Not Operating

B6. P-Link (IC513) Not Operating

B7. MCU (IC301) Not Operating

B8. Image Processor (IC501) Power Saving

B9. SOG (IC615) Not Operating

B10. A/D (IC607) Not Operating

B11. No Video display

B12. No Power On

B13. USB NoT WORK.

B14. NO SOUND

A. Digital Head

A1. Waveforms

FIG 1. p601 & p602 pin1,2....

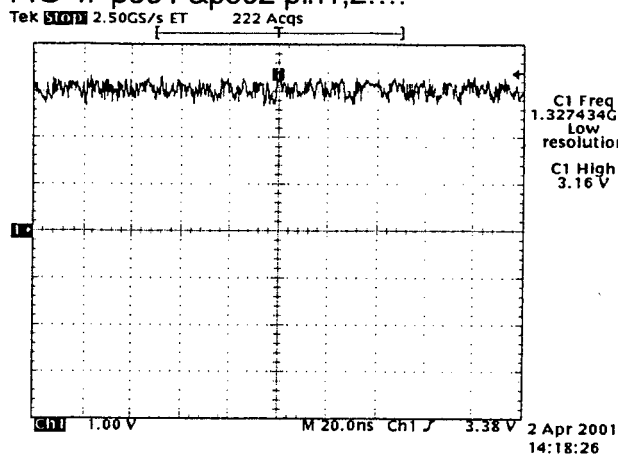


FIG 2. p601&p602 pin 5,6

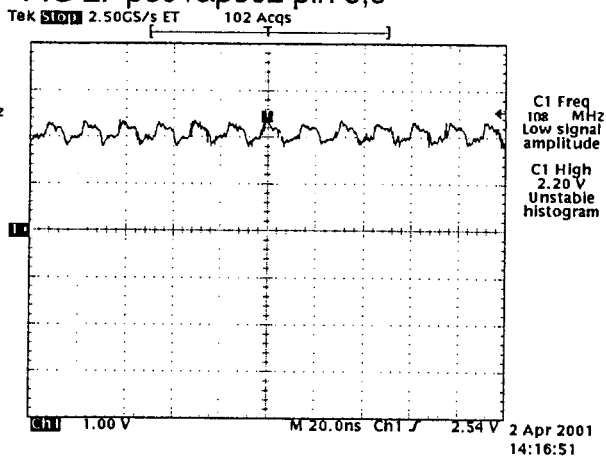


FIG 3. H-SYNC....

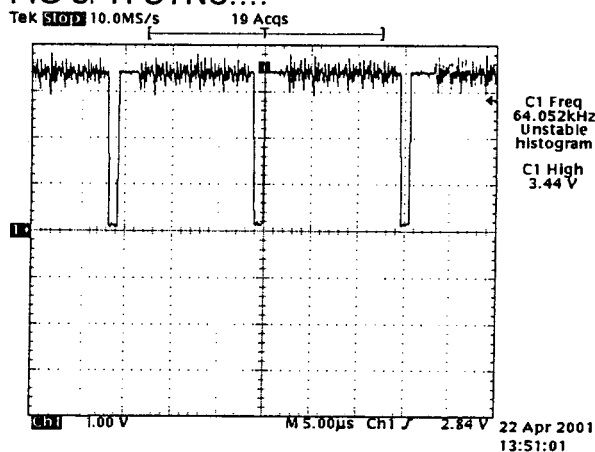


FIG 4. DATA ENABLE

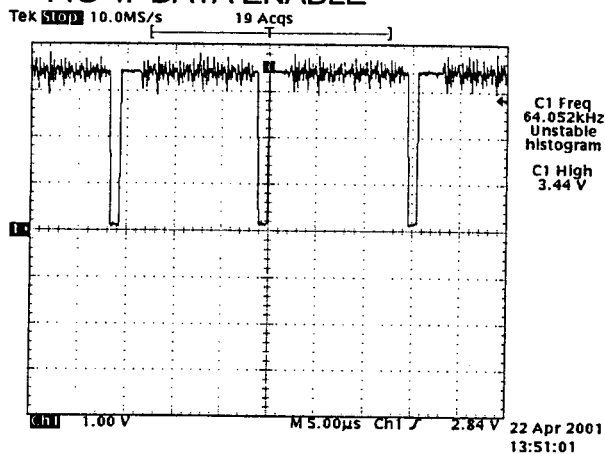


FIG 5 V-SYNC

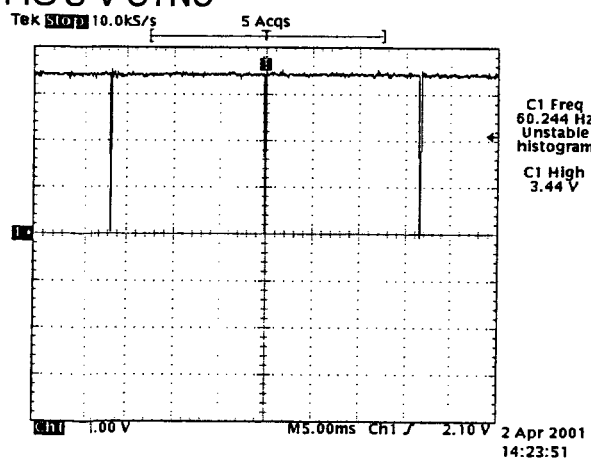


FIG 6 CLOCK

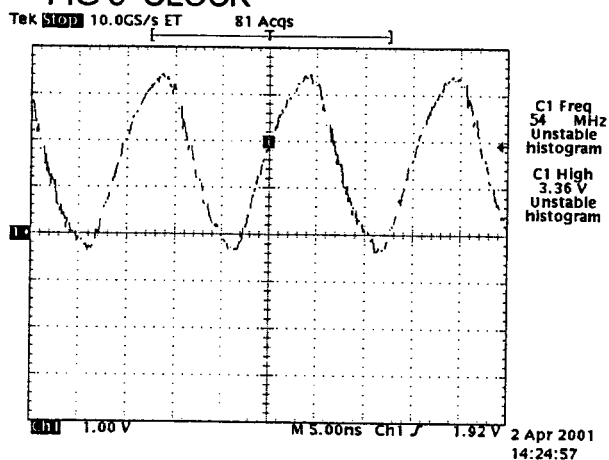


FIG 7. R509&R510....

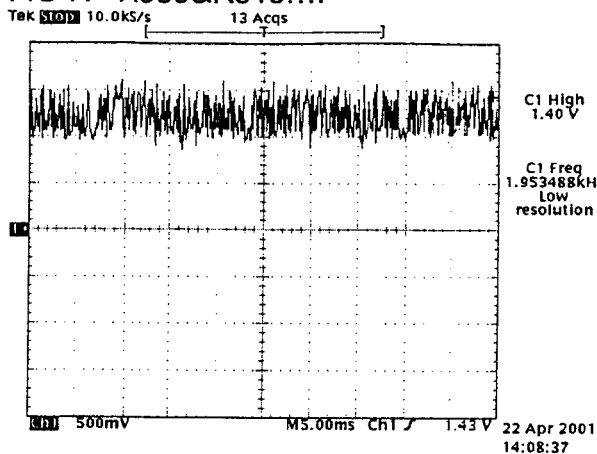


FIG 8. Clock for IC301

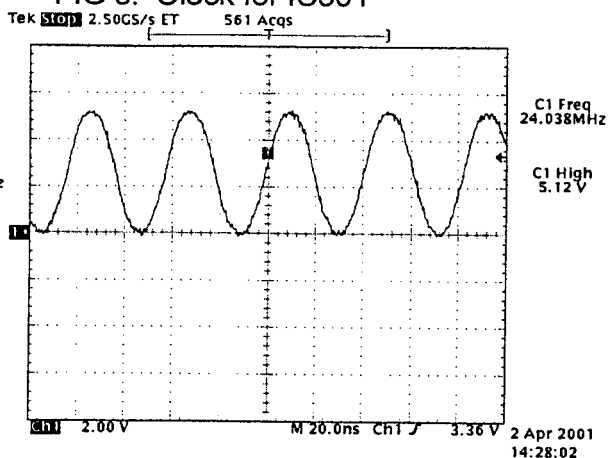


FIG 9. SDA

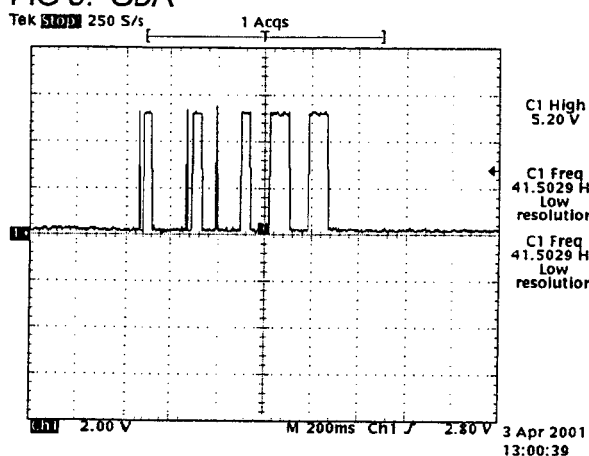


FIG 10. SCL

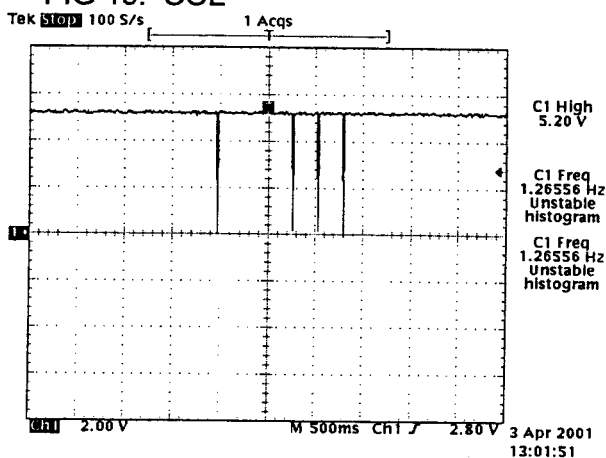


FIG 11. DEN

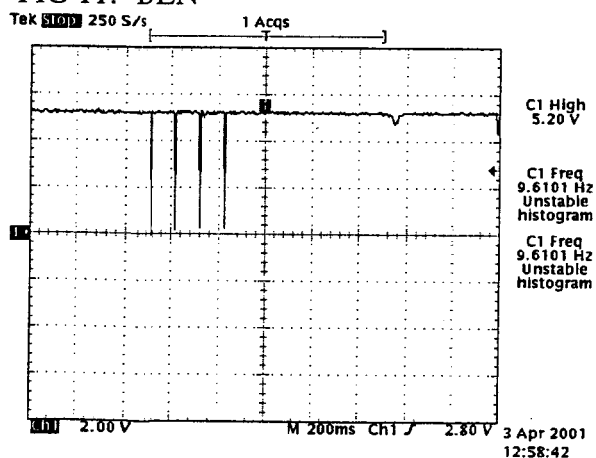


FIG 12 RESET

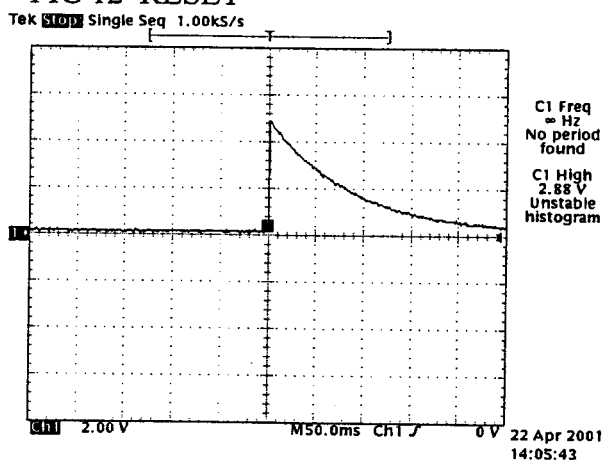


FIG 13 IC 951

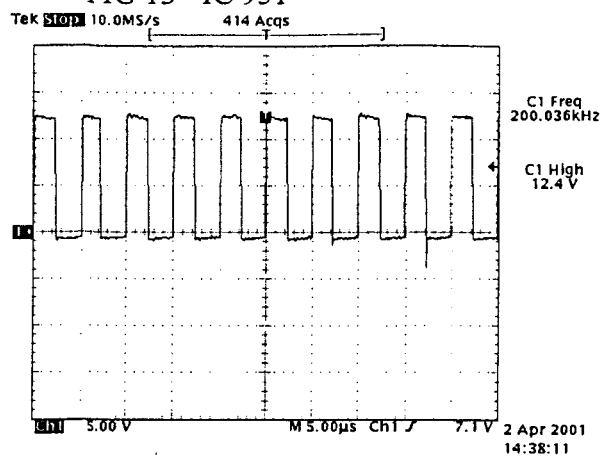


FIG 14 IC 701 RESET

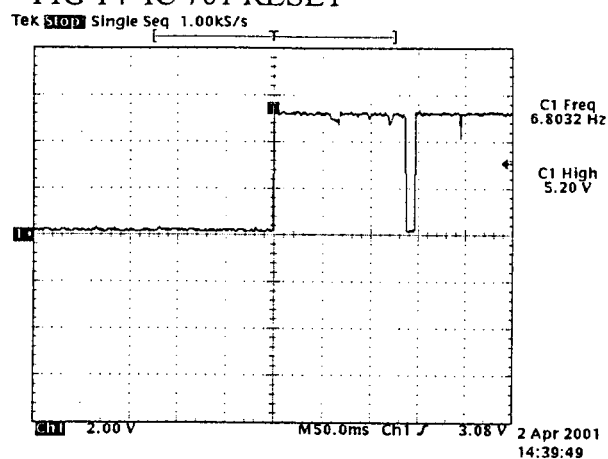
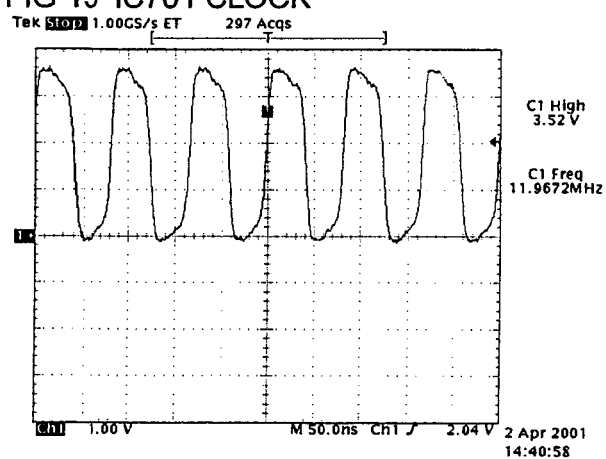
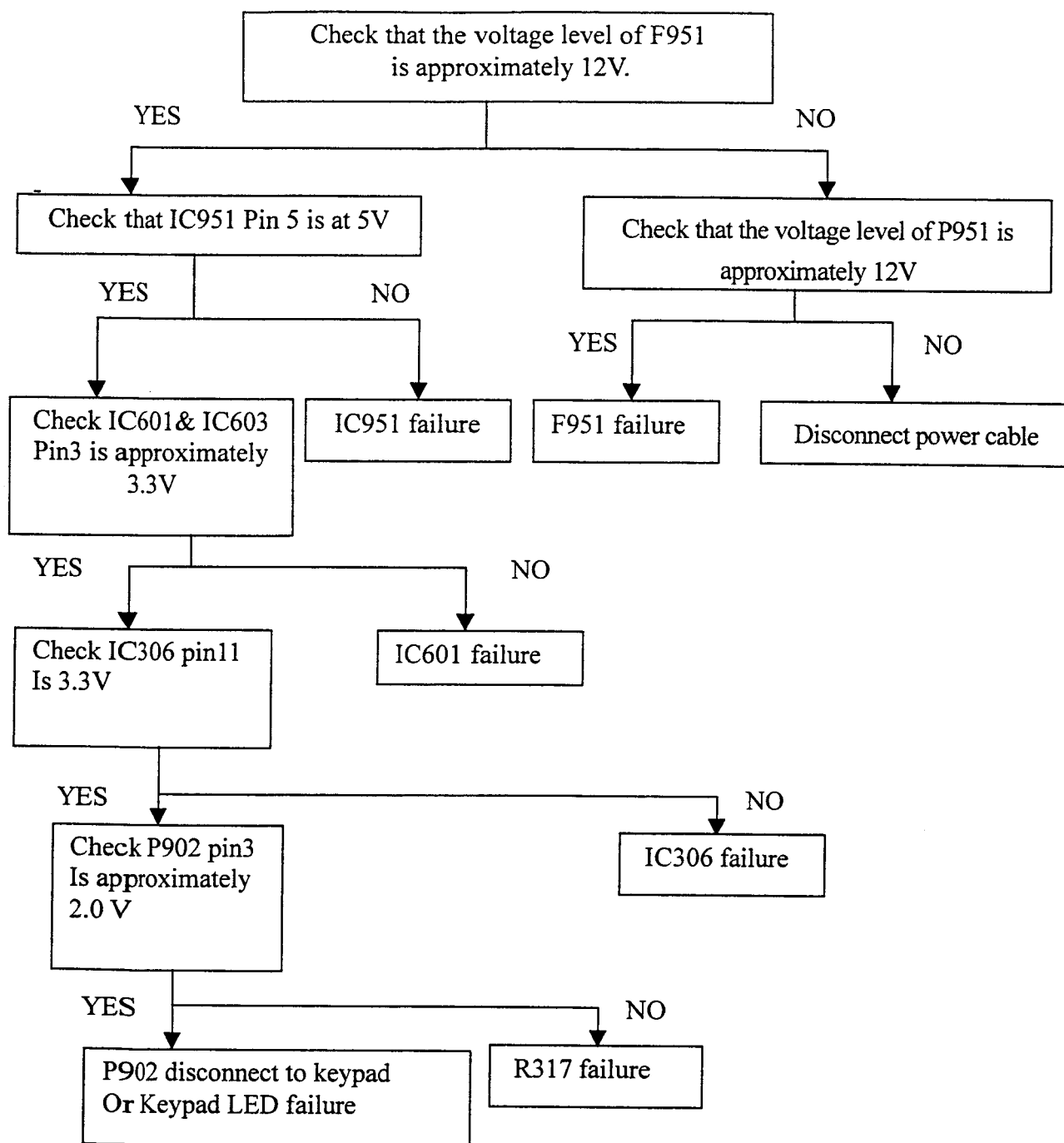


FIG 15 IC701 CLOCK



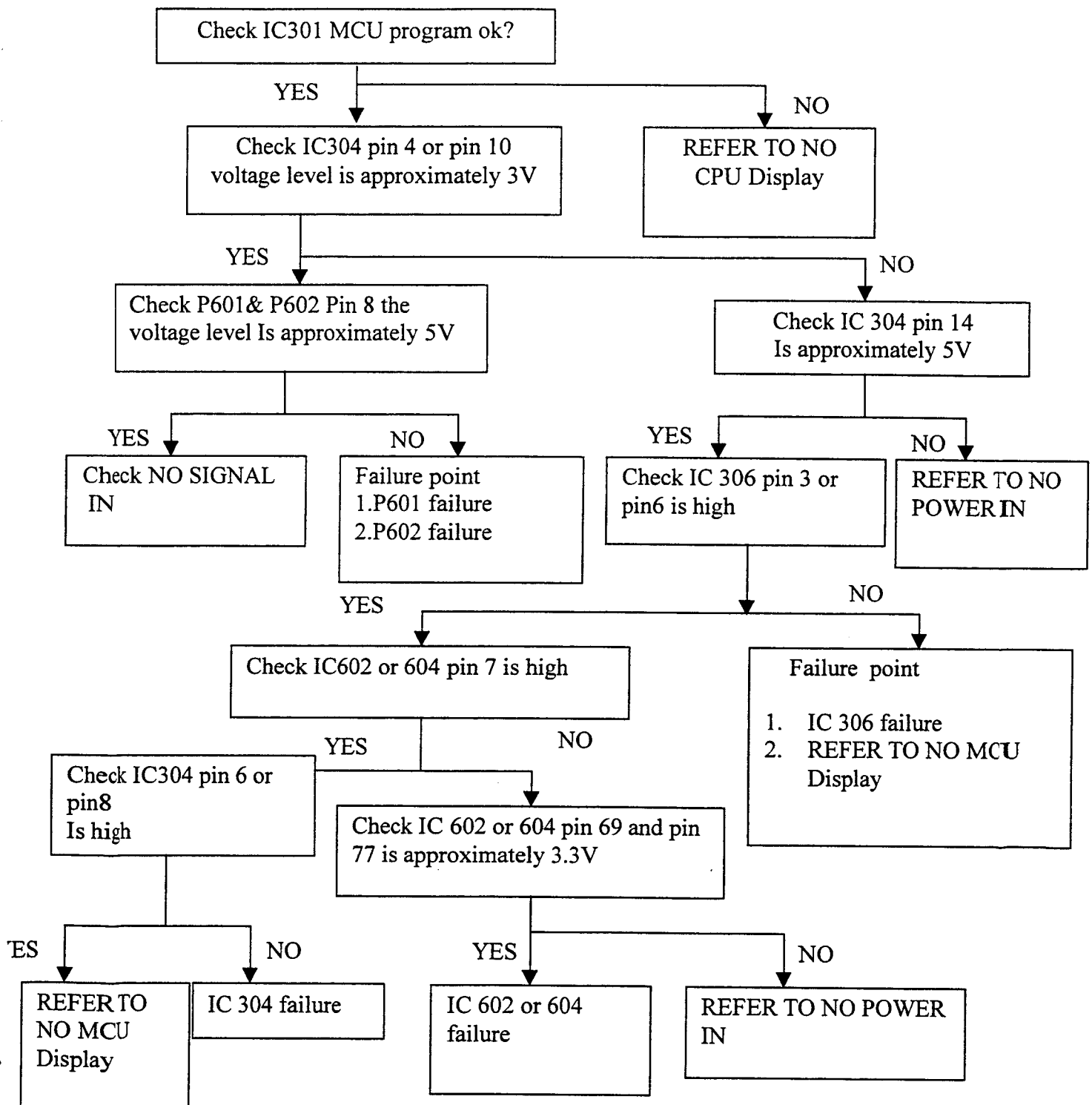
A.Digital Head

A2. No Display on Screen (Screen is black, LED is off)

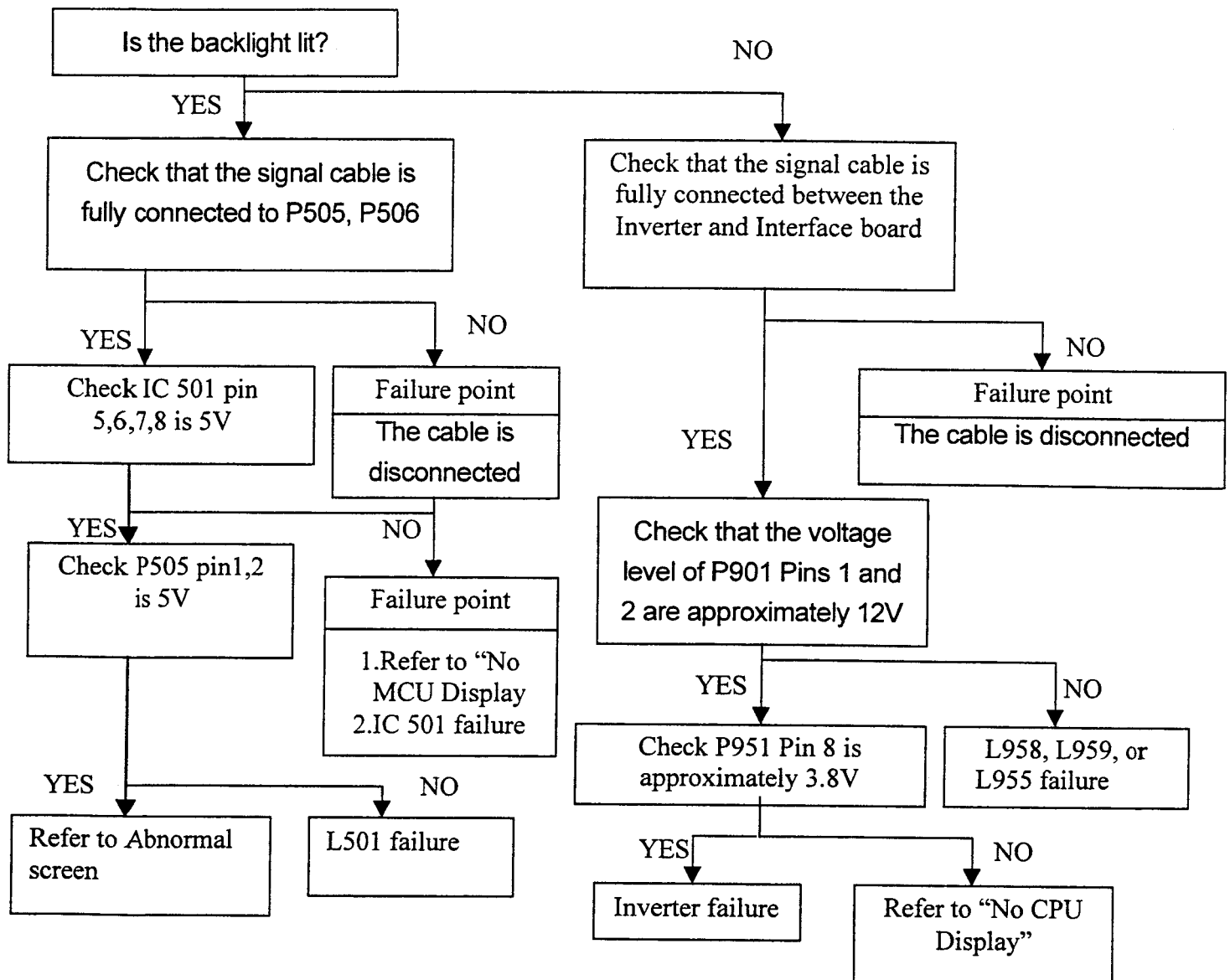


A3. No Display on Screen (Screen is black , LED is amber)

HIGH: > 2.7V LOW: < 0.5V

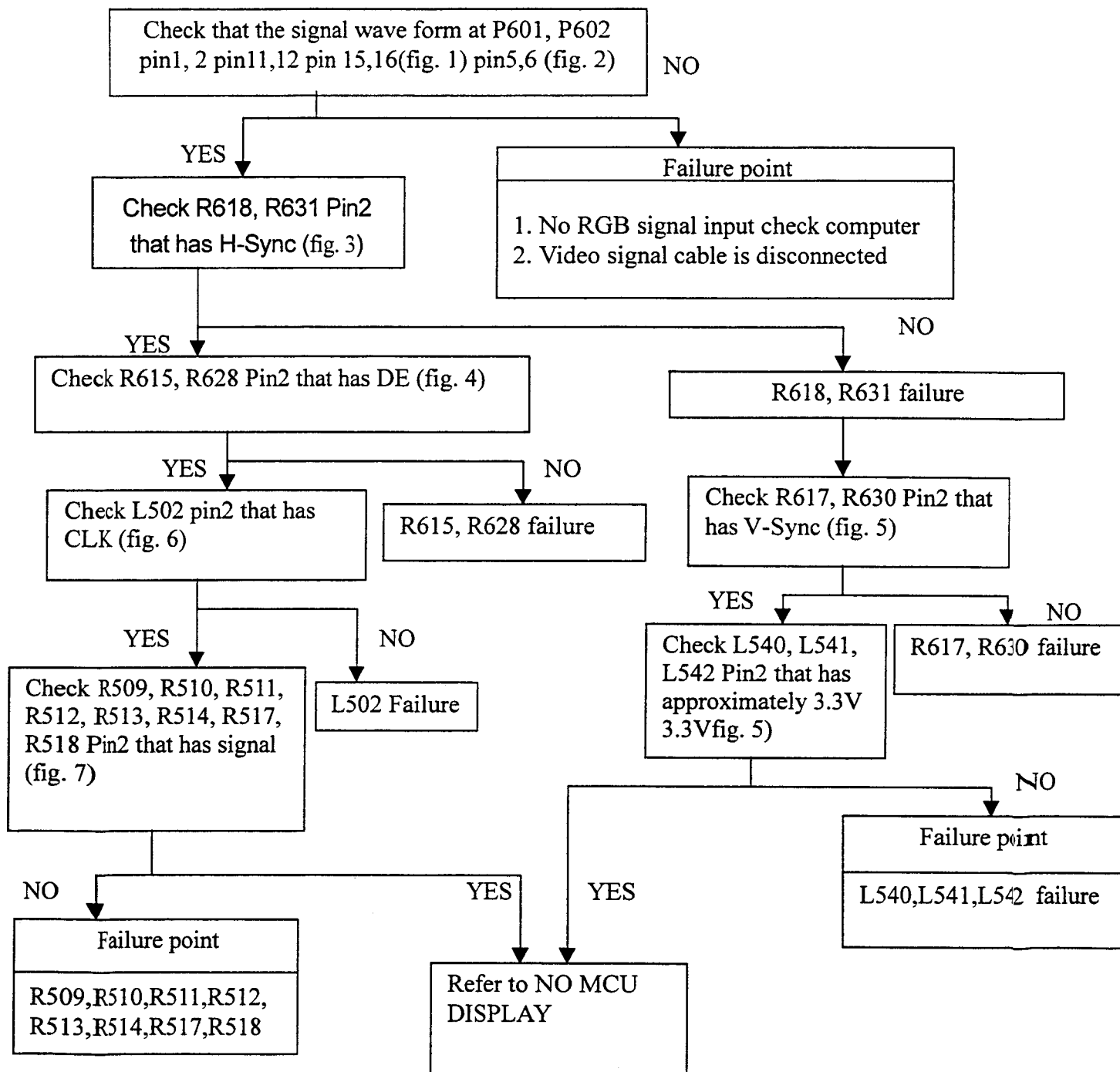


A4. NO Display on Screen (Screen is black, LED is green)



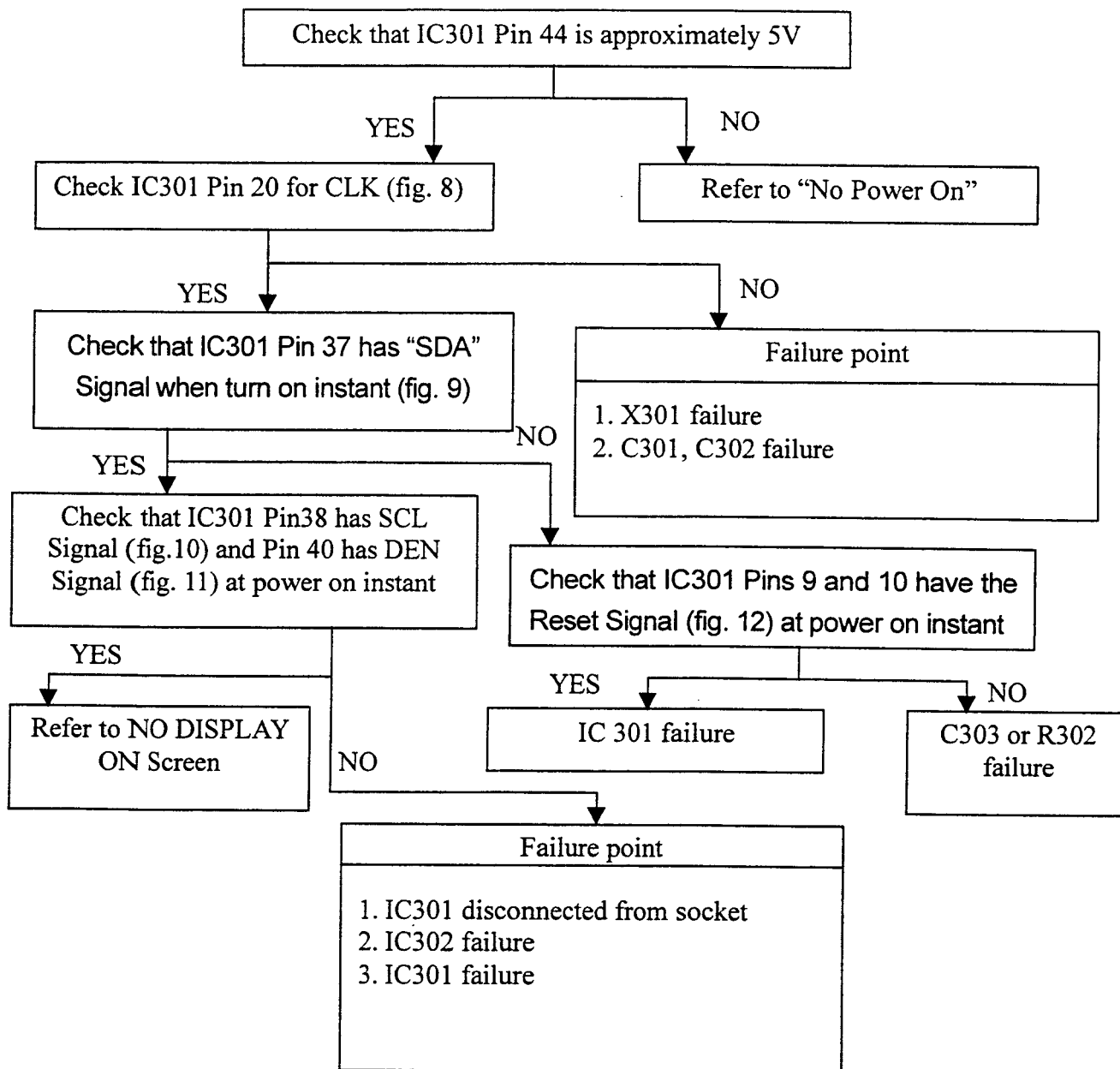
A5. Abnormal Screen

TEST PATTERN: 32GRAY 1024X768- 60HZ

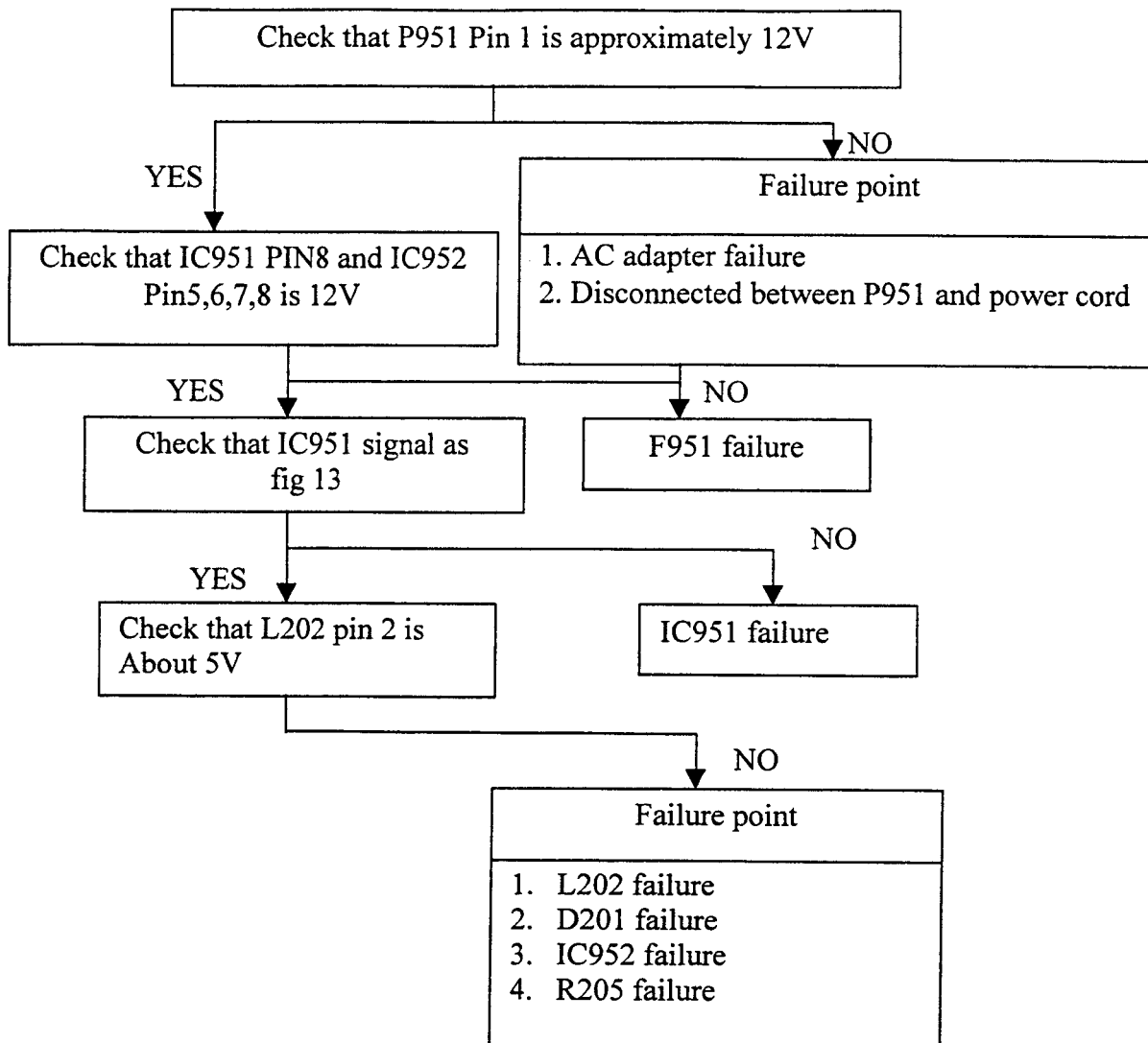


6. No MCU DISPLAY

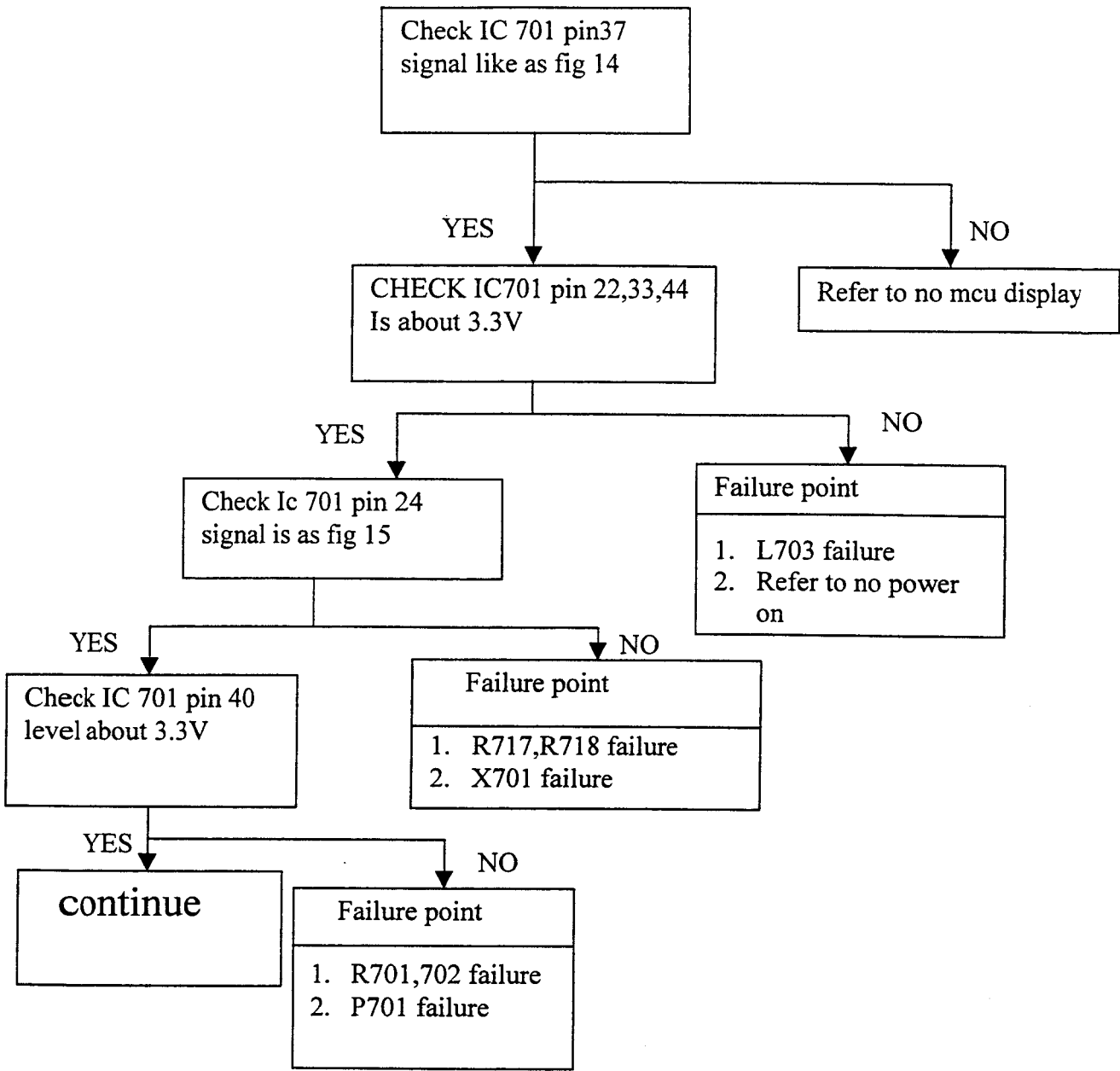
A6. NO MCU DISPLAY (IC301)



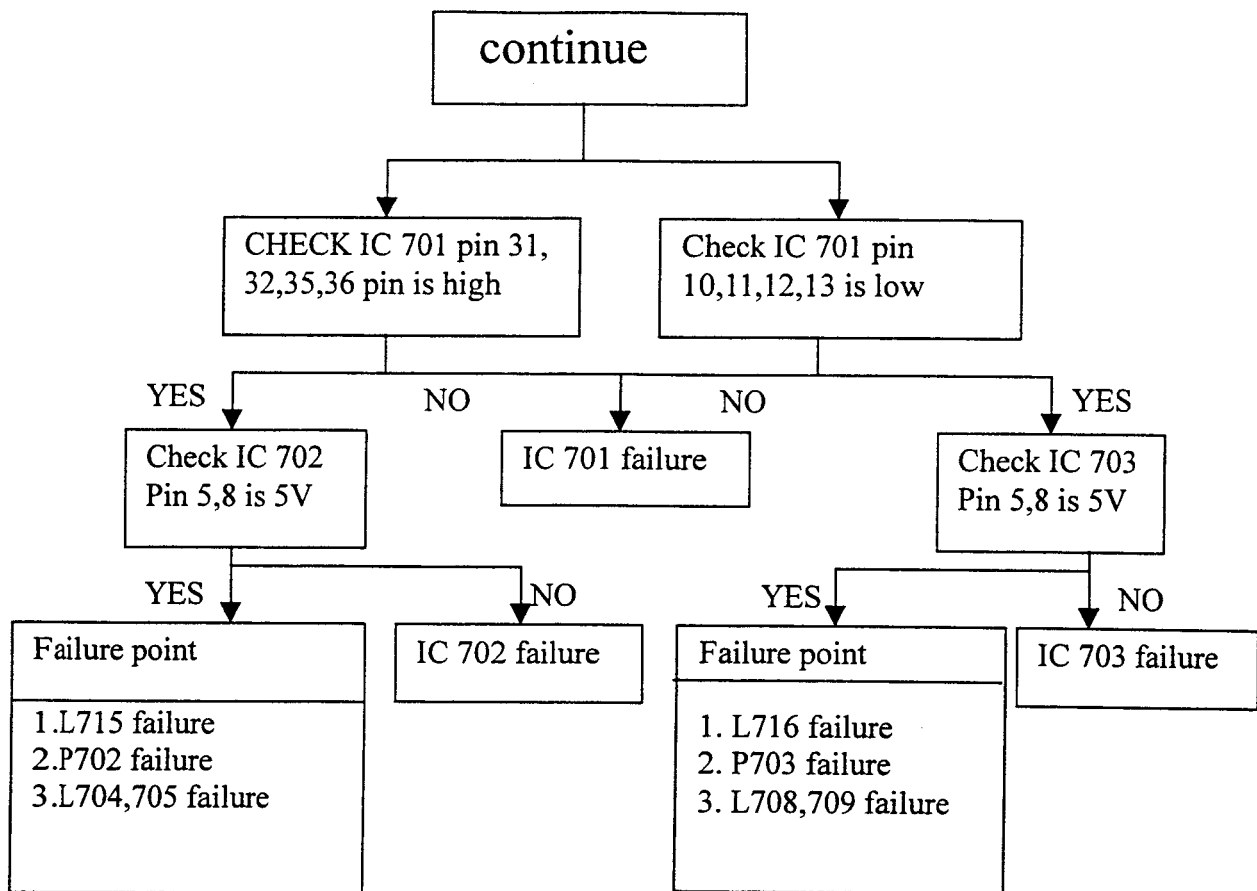
A7. No Power On



A8. USB NOT WORKING



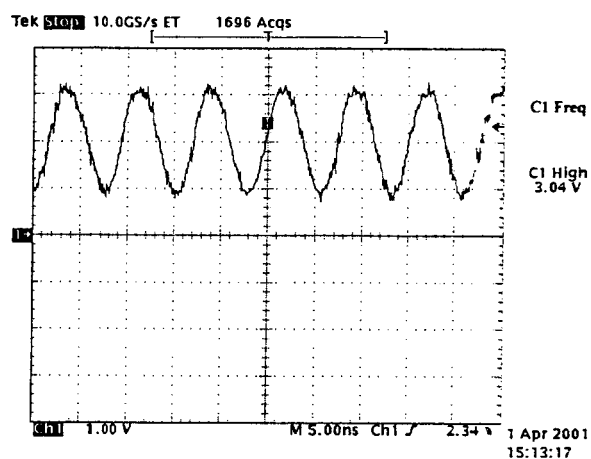
A9. USB NOT WORKING (continued)



B. Analog Base

B1. Figure of Waveform

Figure 1. Memory clock



1024-768-60MHz

Figure 2. Display clock

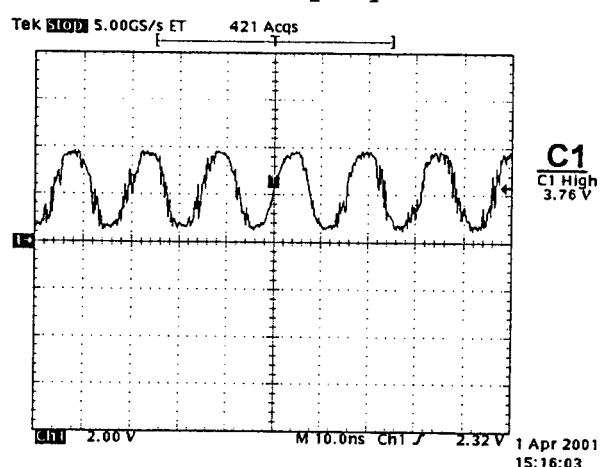


Figure 3. Reset for IC501

Figure 4. ROMOEN

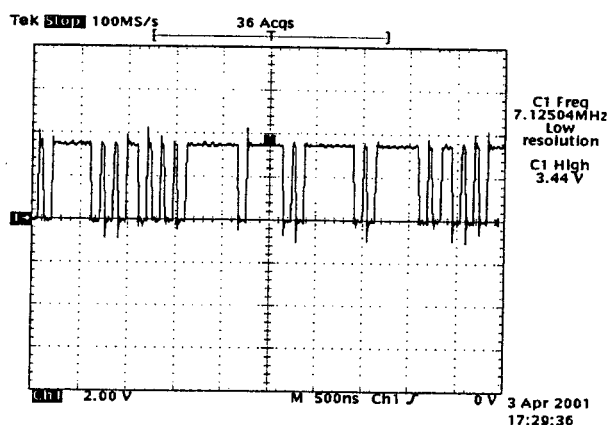
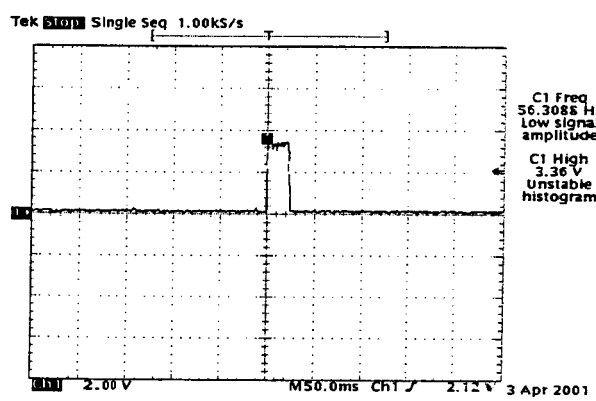


Figure 5. DE for IC513

Figure 6. HS for IC513

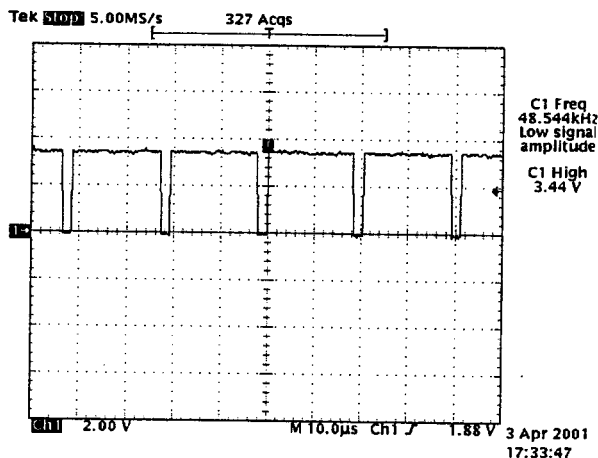
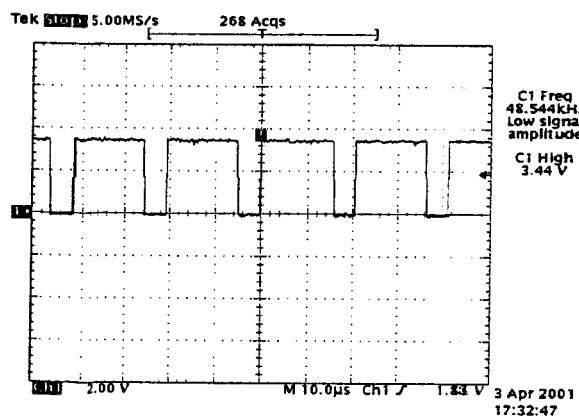


Figure 7. VS for IC513

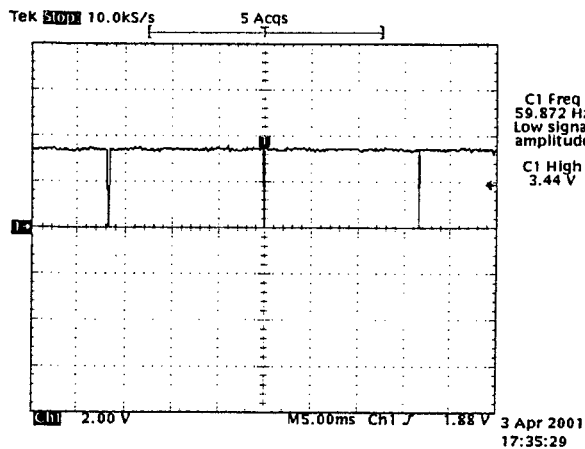


Figure 9. IC513 pin 21 output

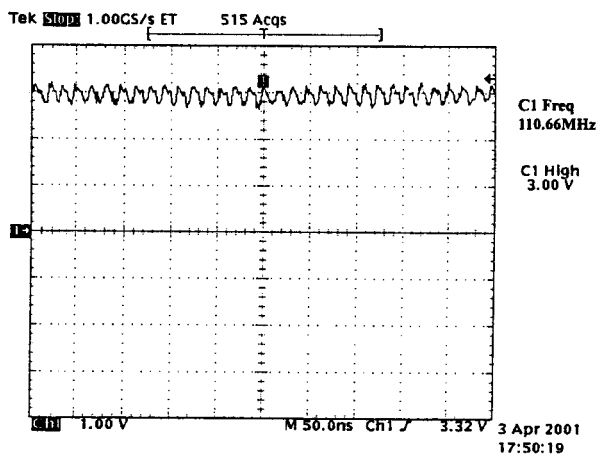


Figure 11. Clock for IC616

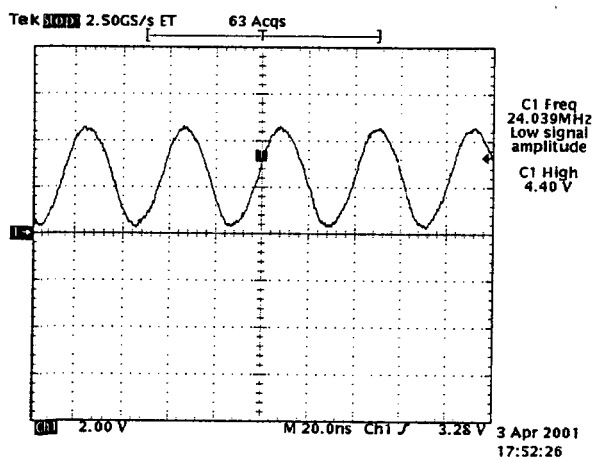


Figure 8. DCLK for IC513

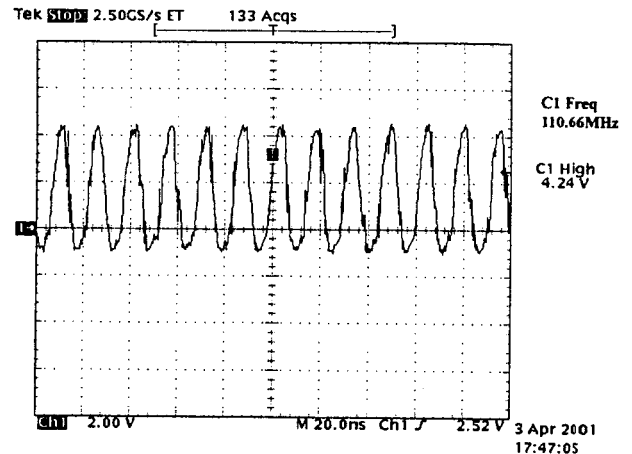


Figure 10. IC513 pin 24 output

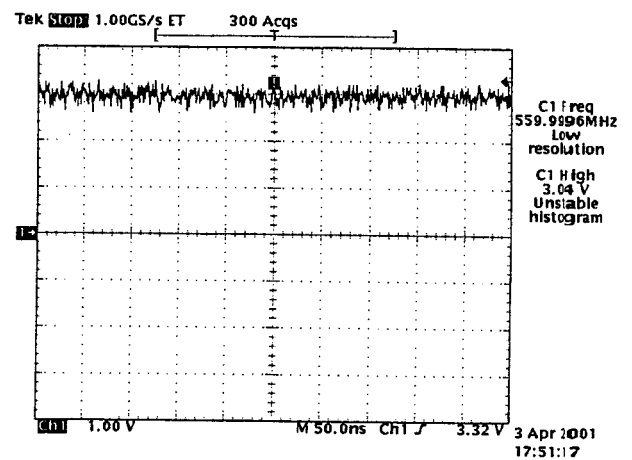


Figure 12. VS for IC616

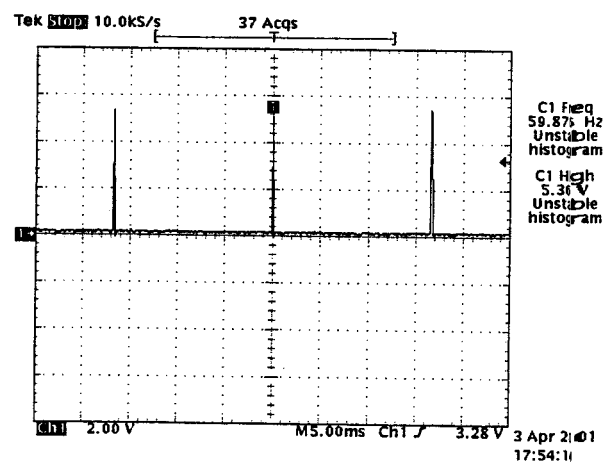


Figure 13. VS for IC616

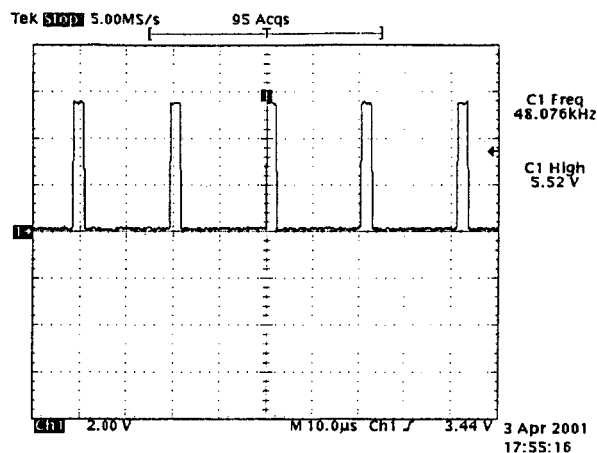


Figure 14. SOG for IC616

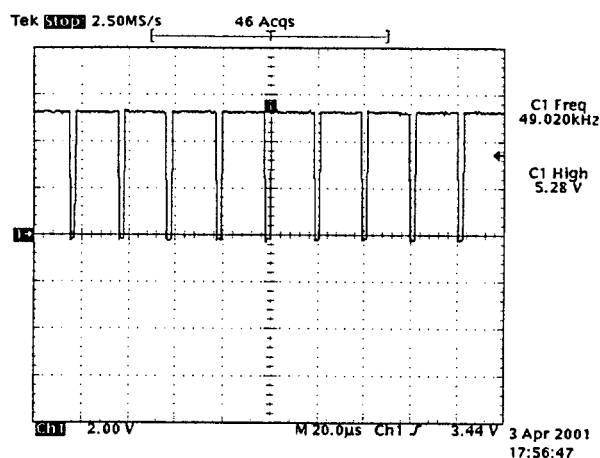


Figure 15. H+V for IC601

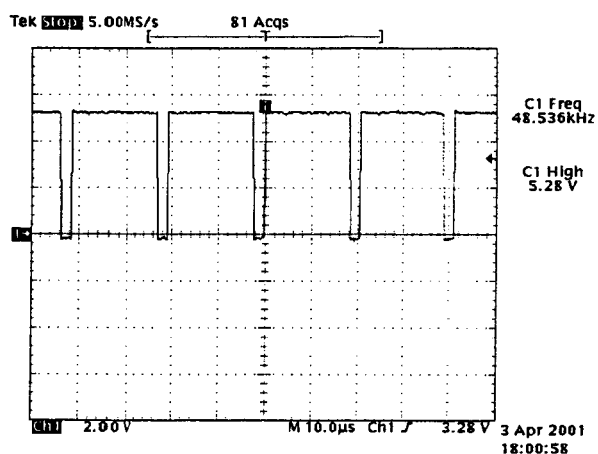


Figure 16. SOG output

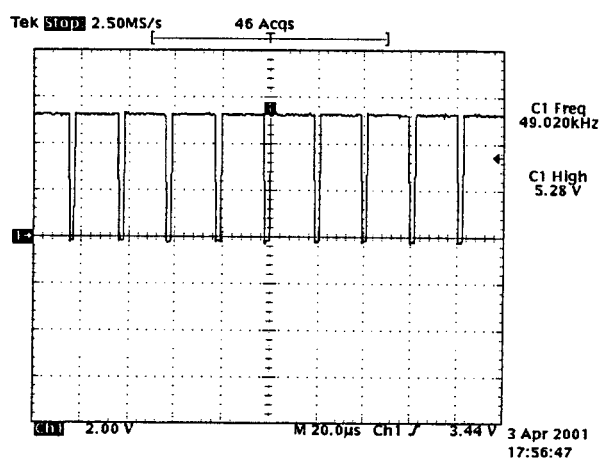


Figure 17. SOG input

Figure 18. IC607 pin 7 input

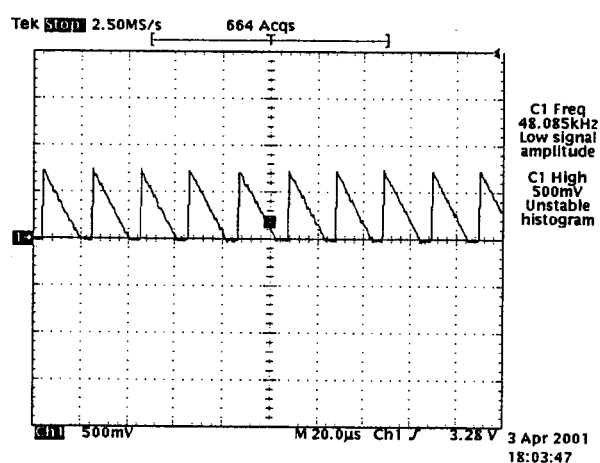
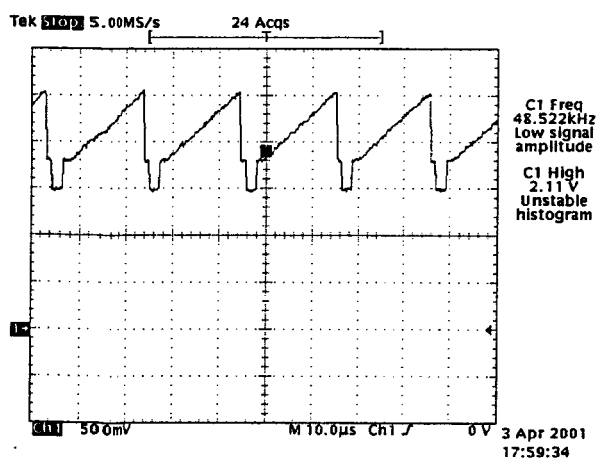


Figure 19. HS for IC607

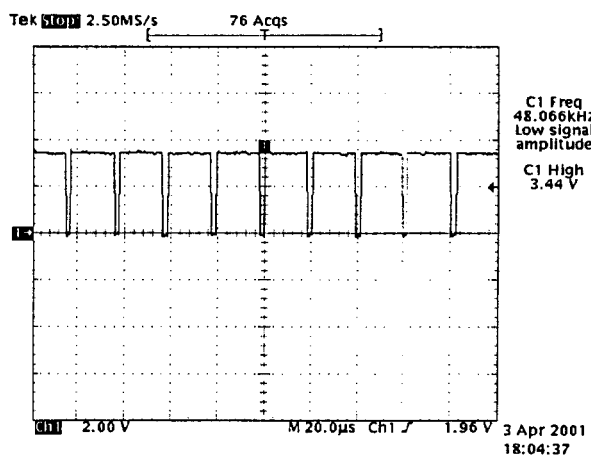


Figure 21. SW

Figure 20. Clamp for IC607

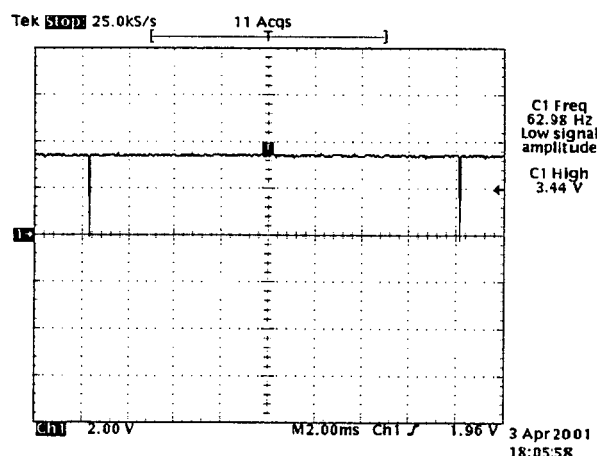


Figure 22. P603 input signal

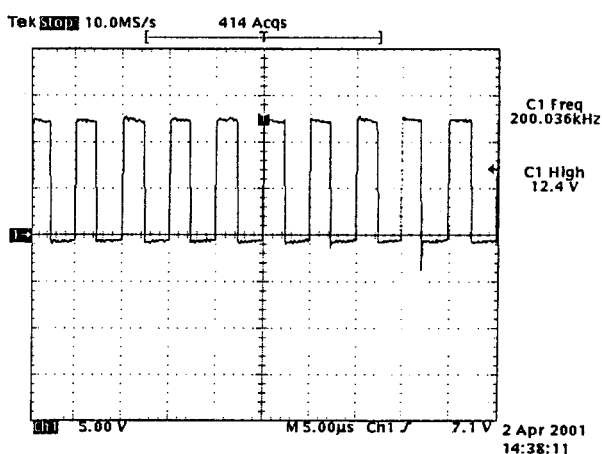


Figure 23. Clock for IC610

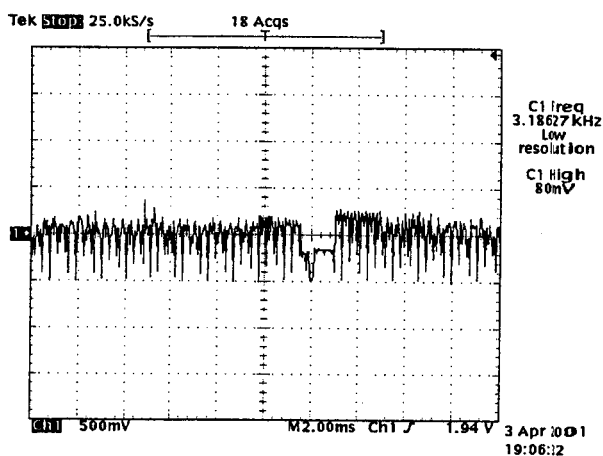


Figure 24. HS for IC610

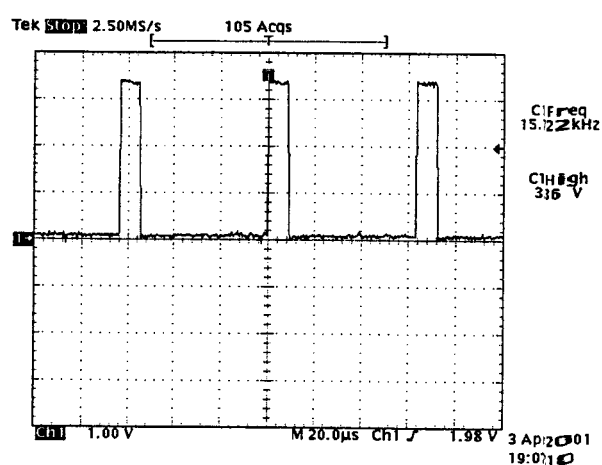
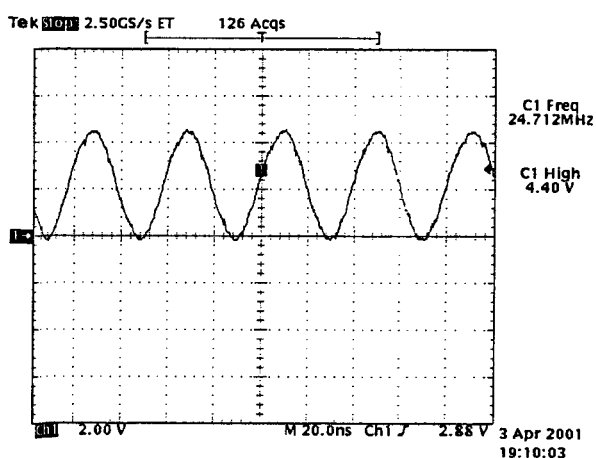


Figure 25. VS for IC610

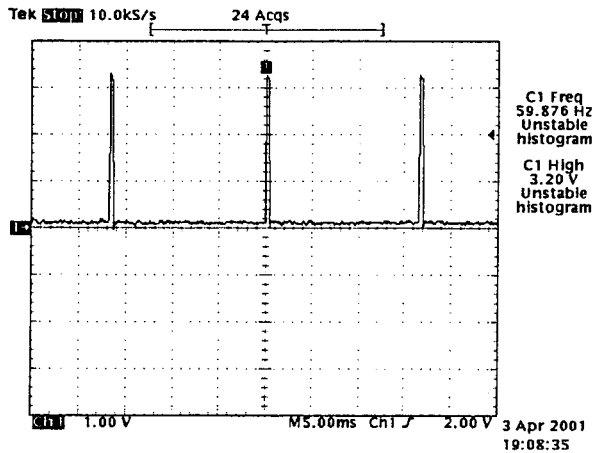


Figure 27. Clock for IC610

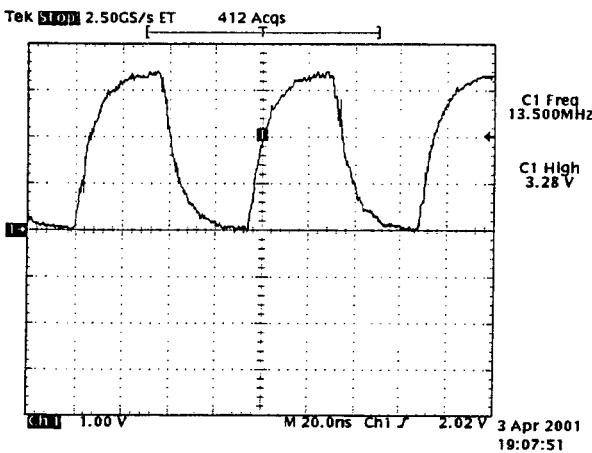


Figure 29. RESET for IC703

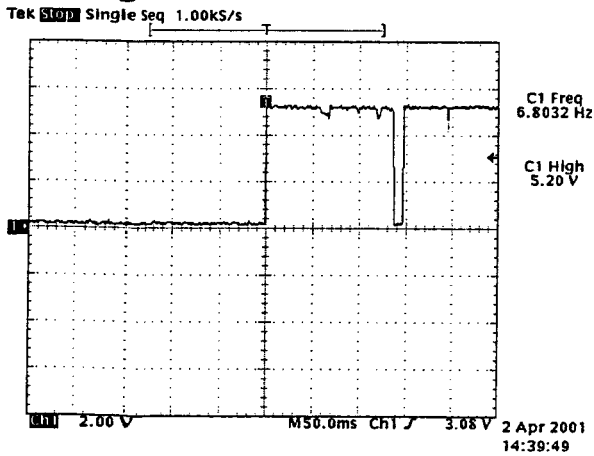


Figure 26. Filed for IC610

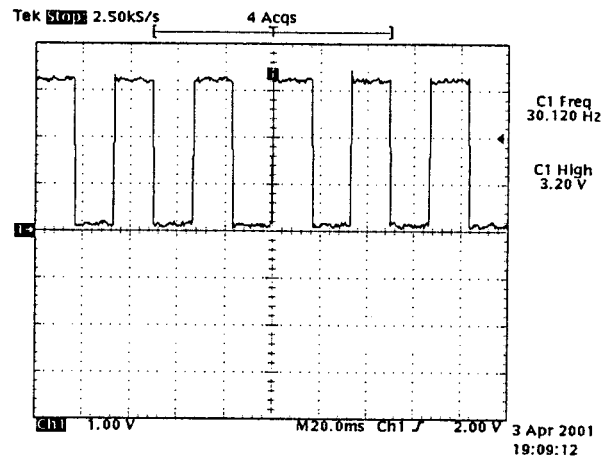


Figure 28. Reset for IC616

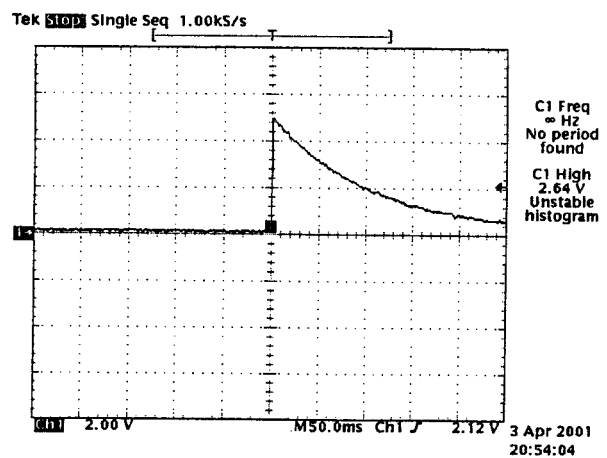


Figure 30. CLOCK for IC703

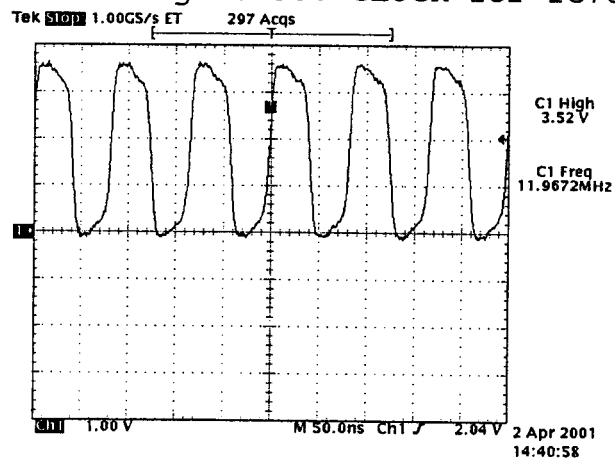


Figure 31. IC801

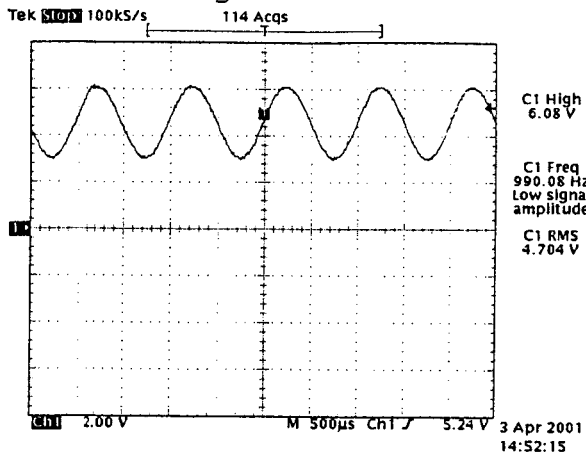
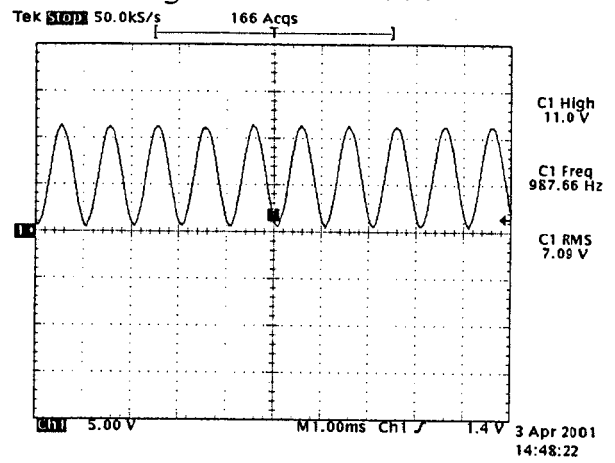
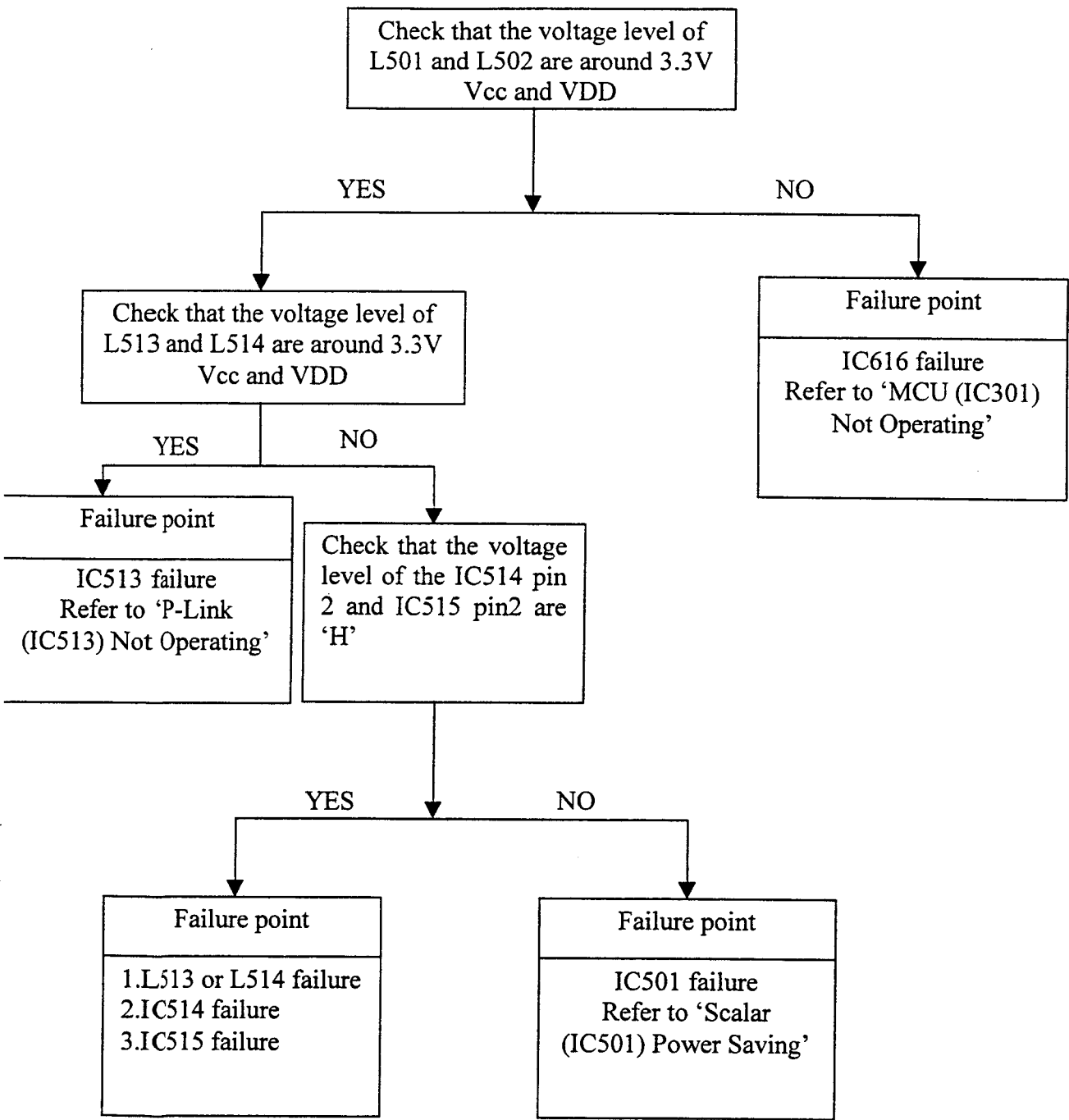


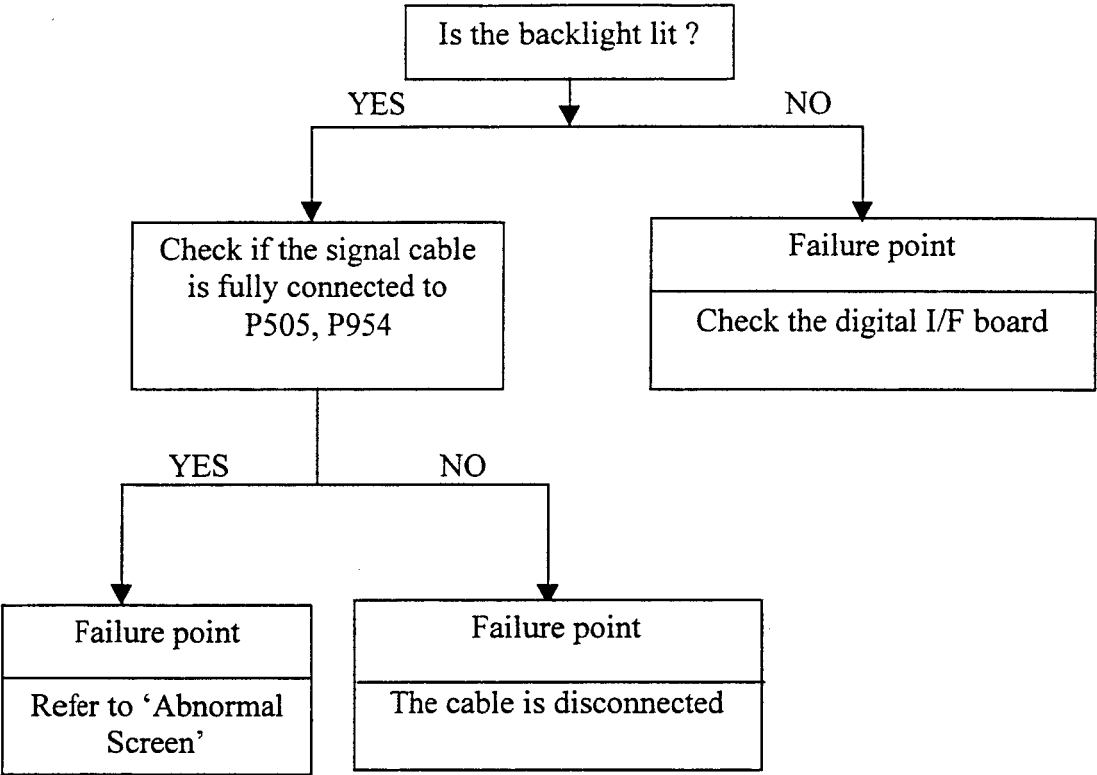
Figure 28. IC802



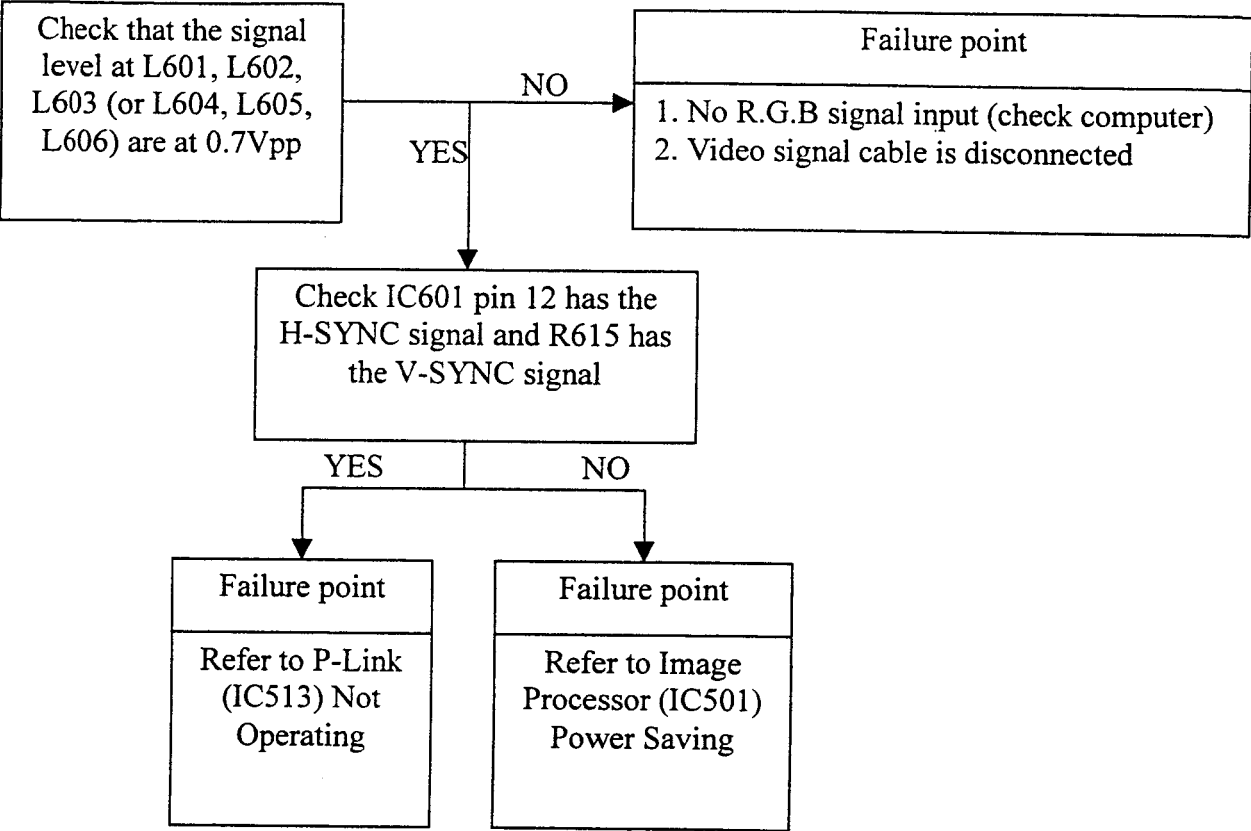
B2. No Display on Screen (Screen is Black, the digital I/F' S LED is amber)



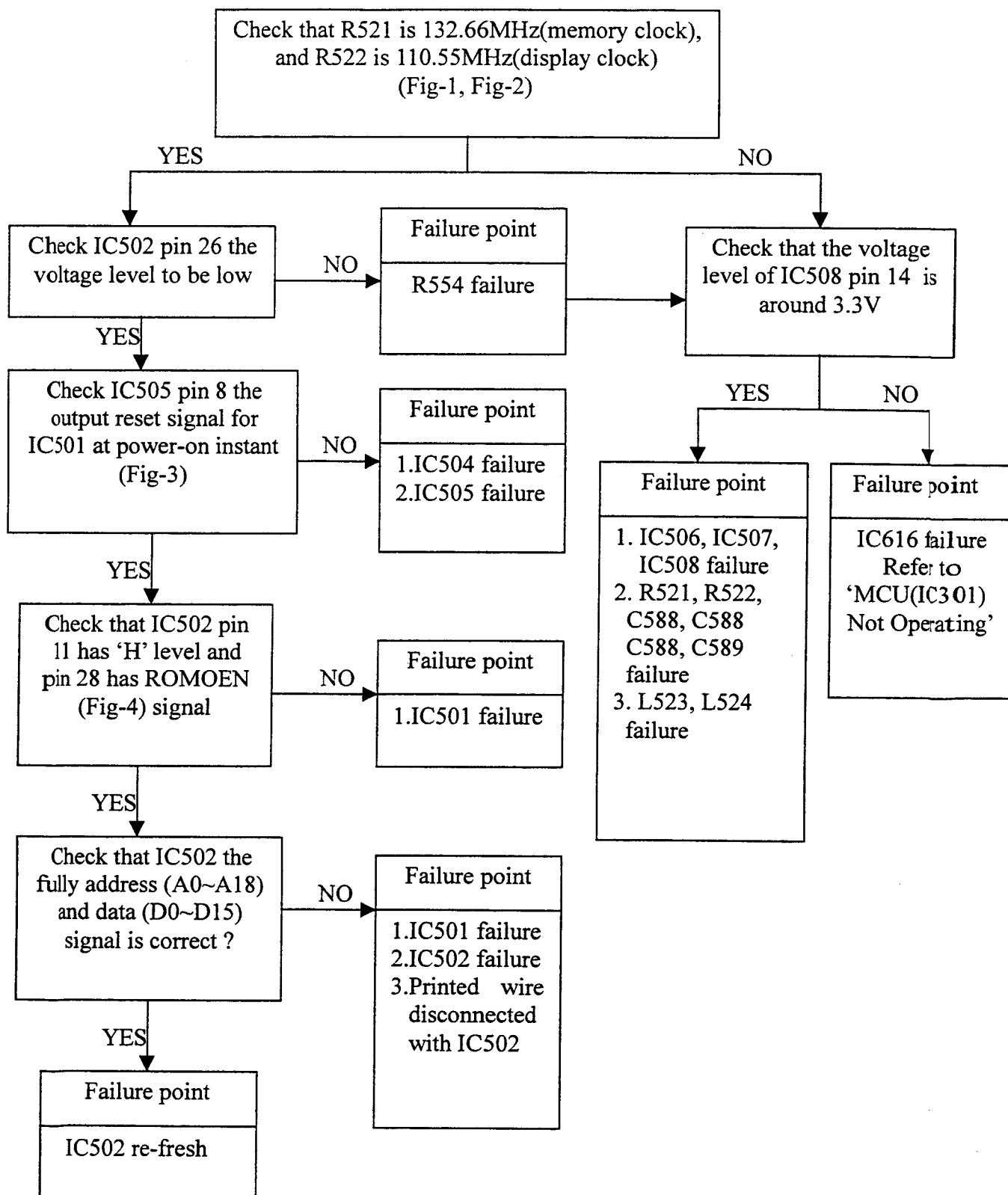
B3. No Display on Screen (Screen is Black, Digital I/F ' S LED is green)



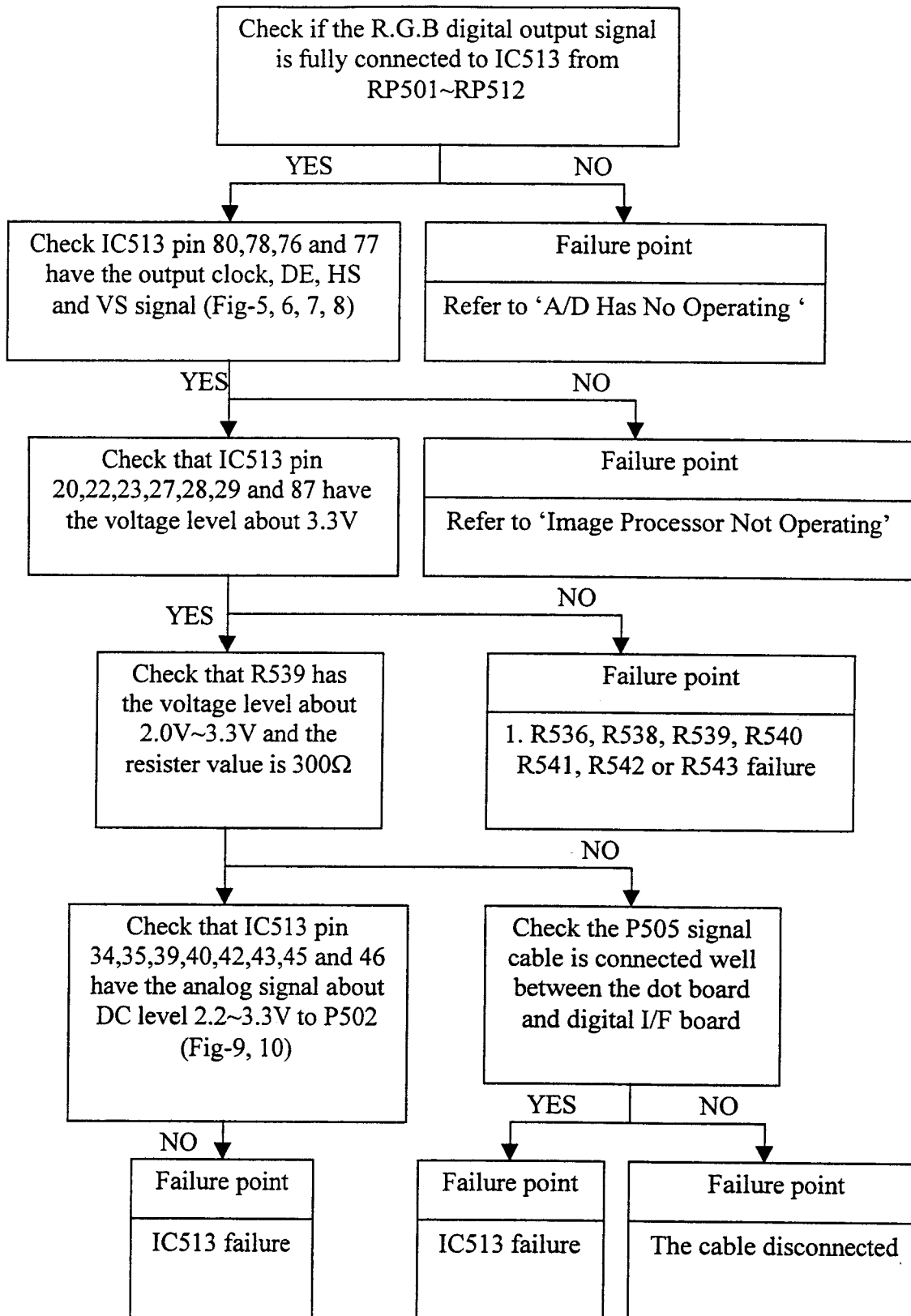
B4. Abnormal Screen



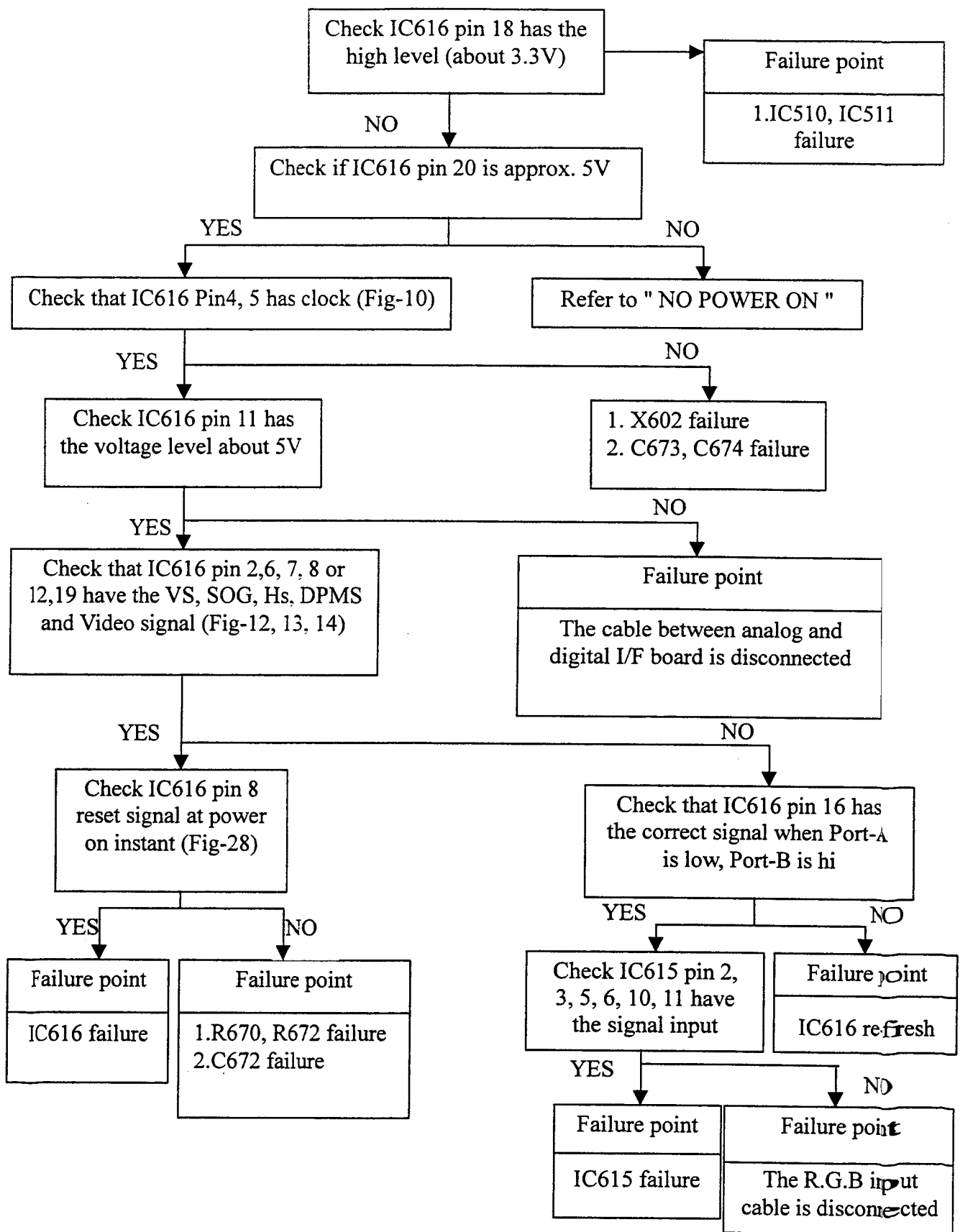
B5. Image Processor Not Operating



B6. P-Link (IC513) Not Operating



B7. MCU (IC301) Not Operating



B8. Image Processor Power Saving

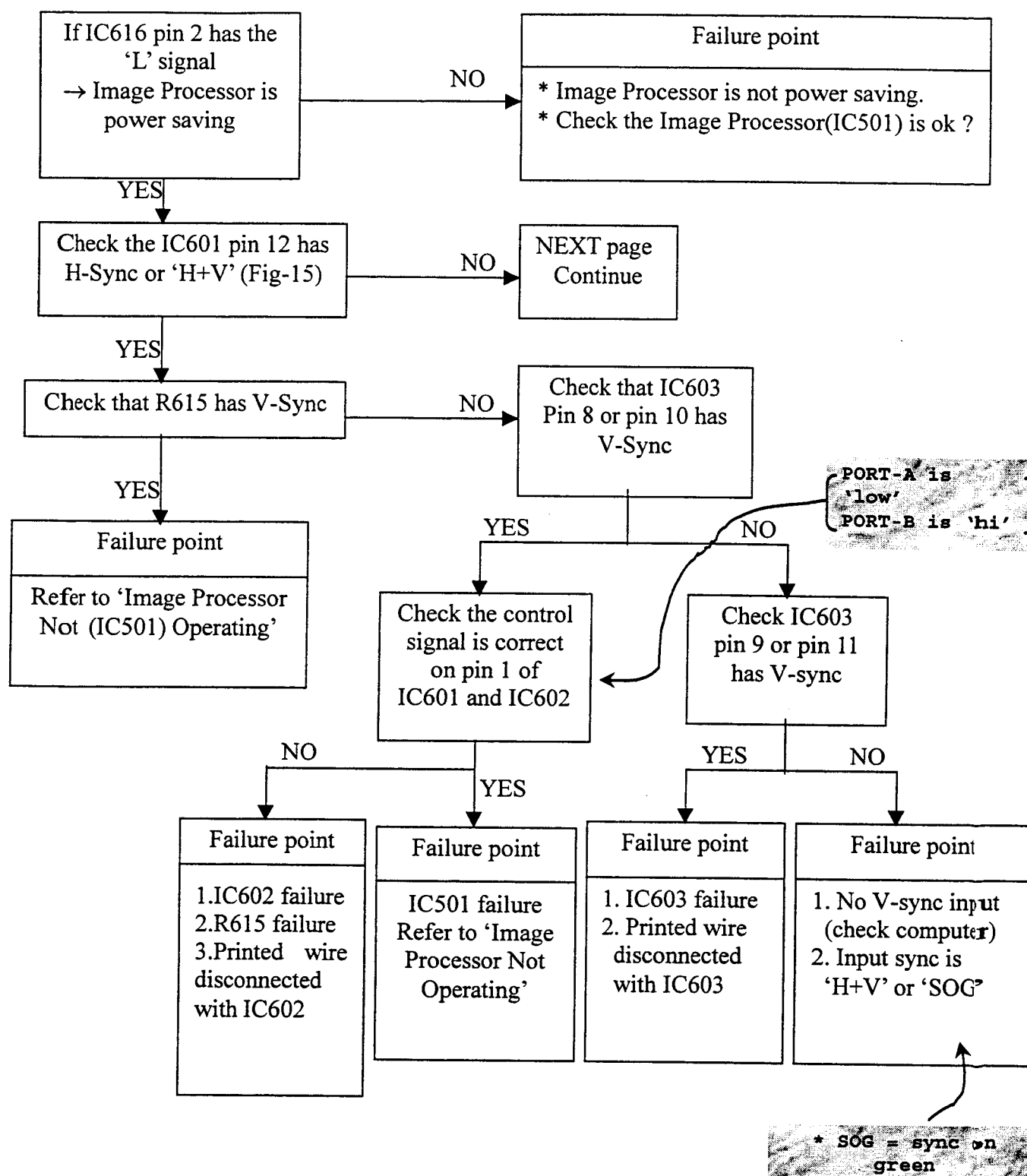
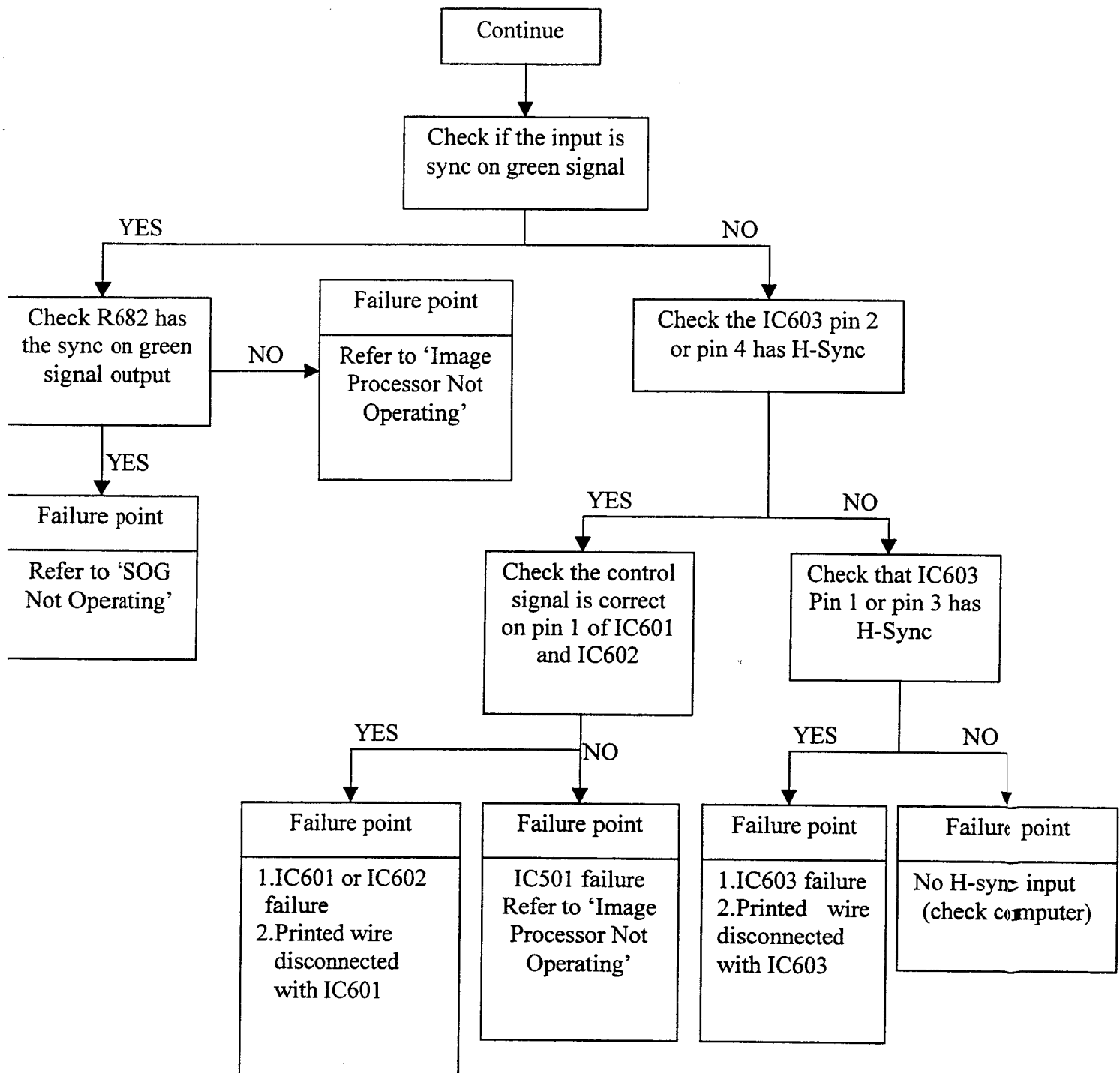
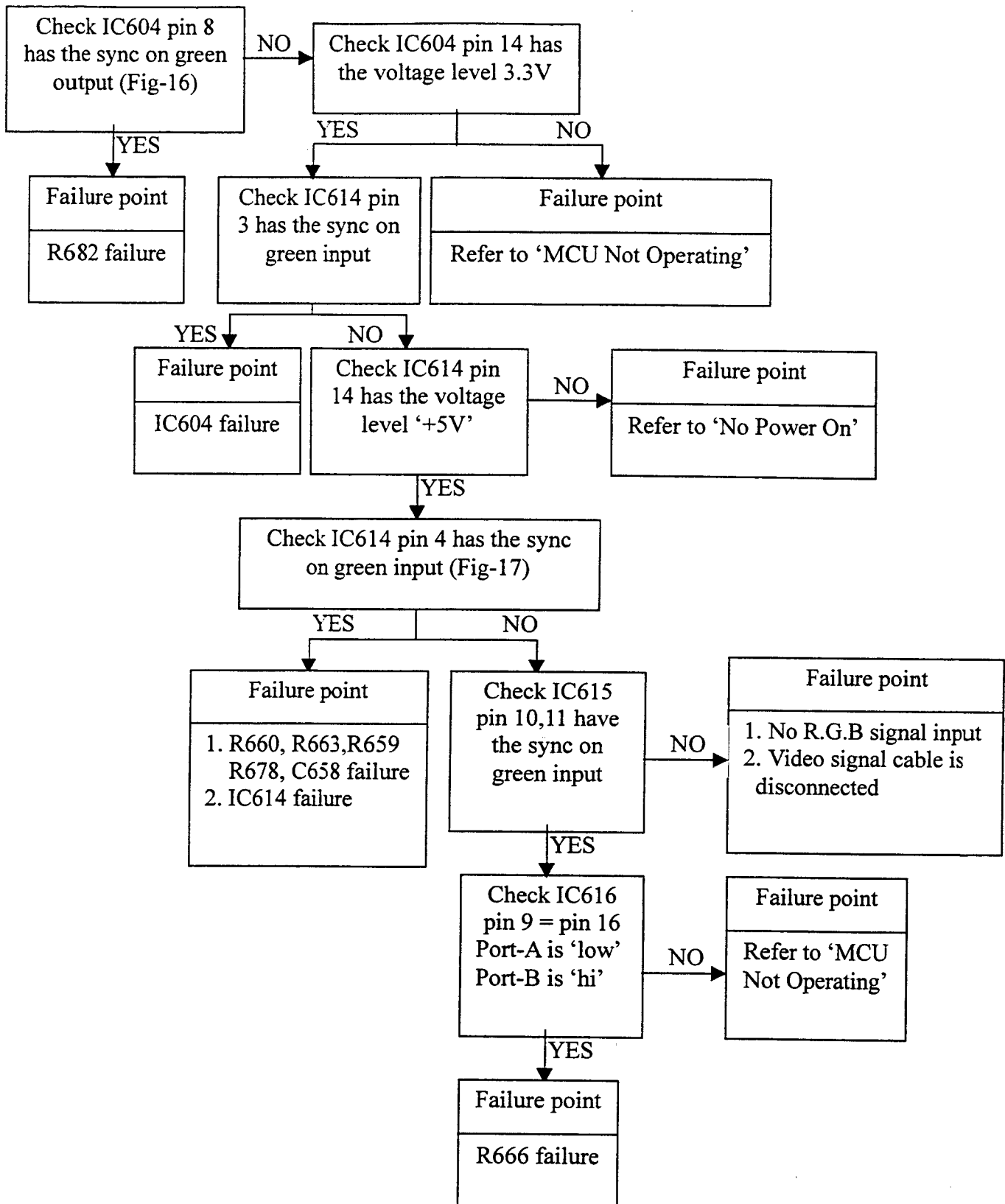


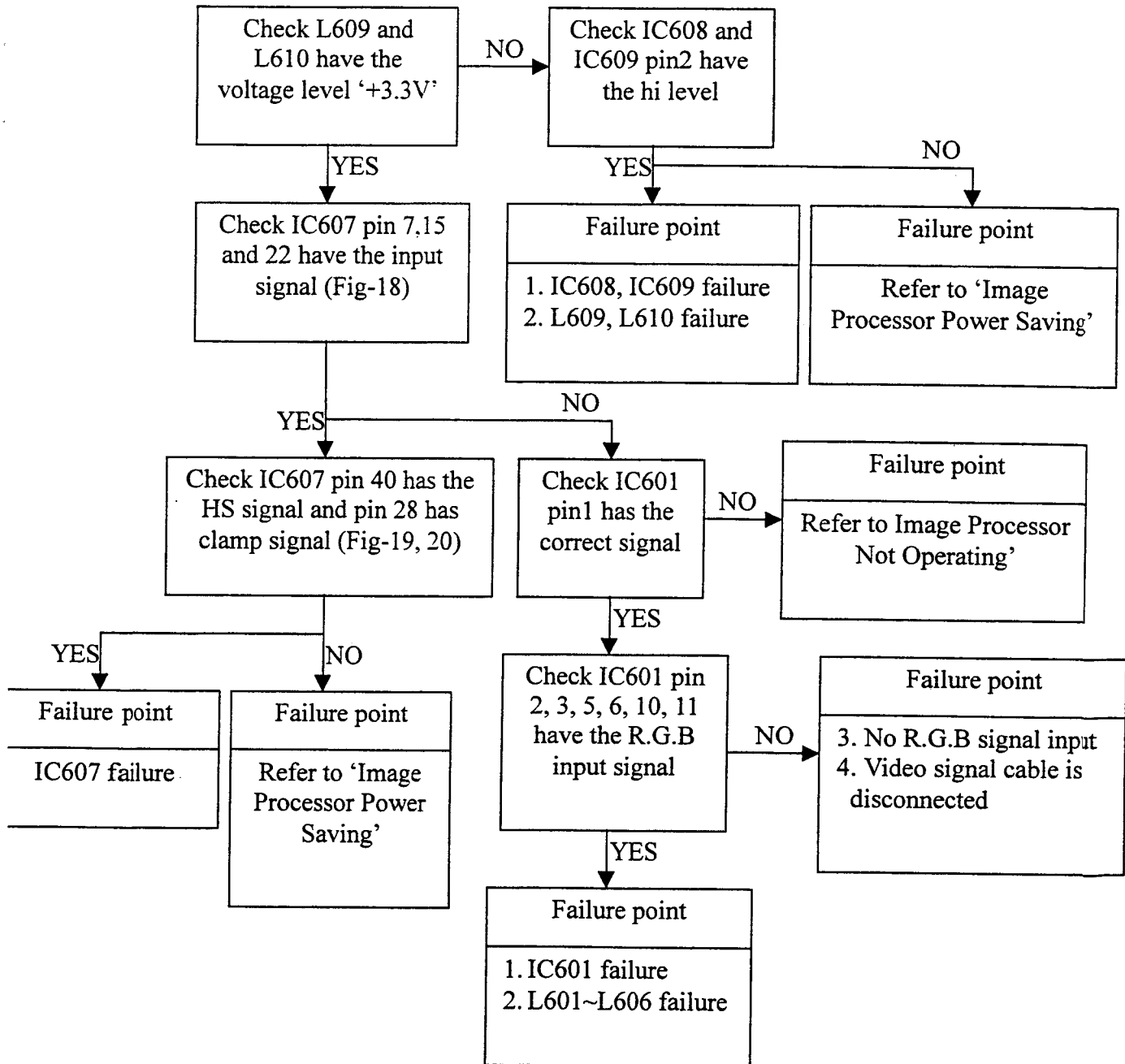
Image Processor Power Saving (cont.)



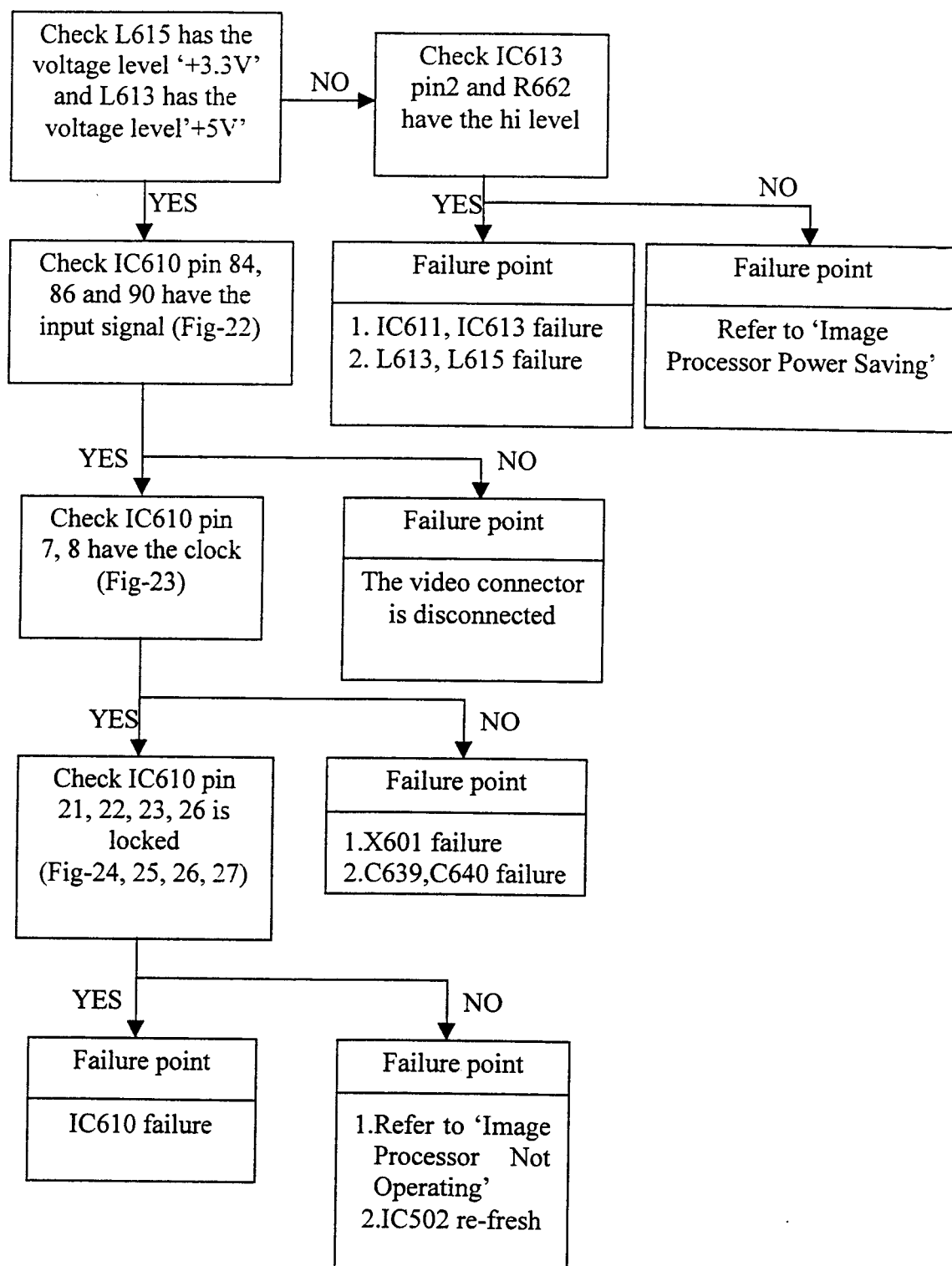
B9. SOG (IC615) Not Operating



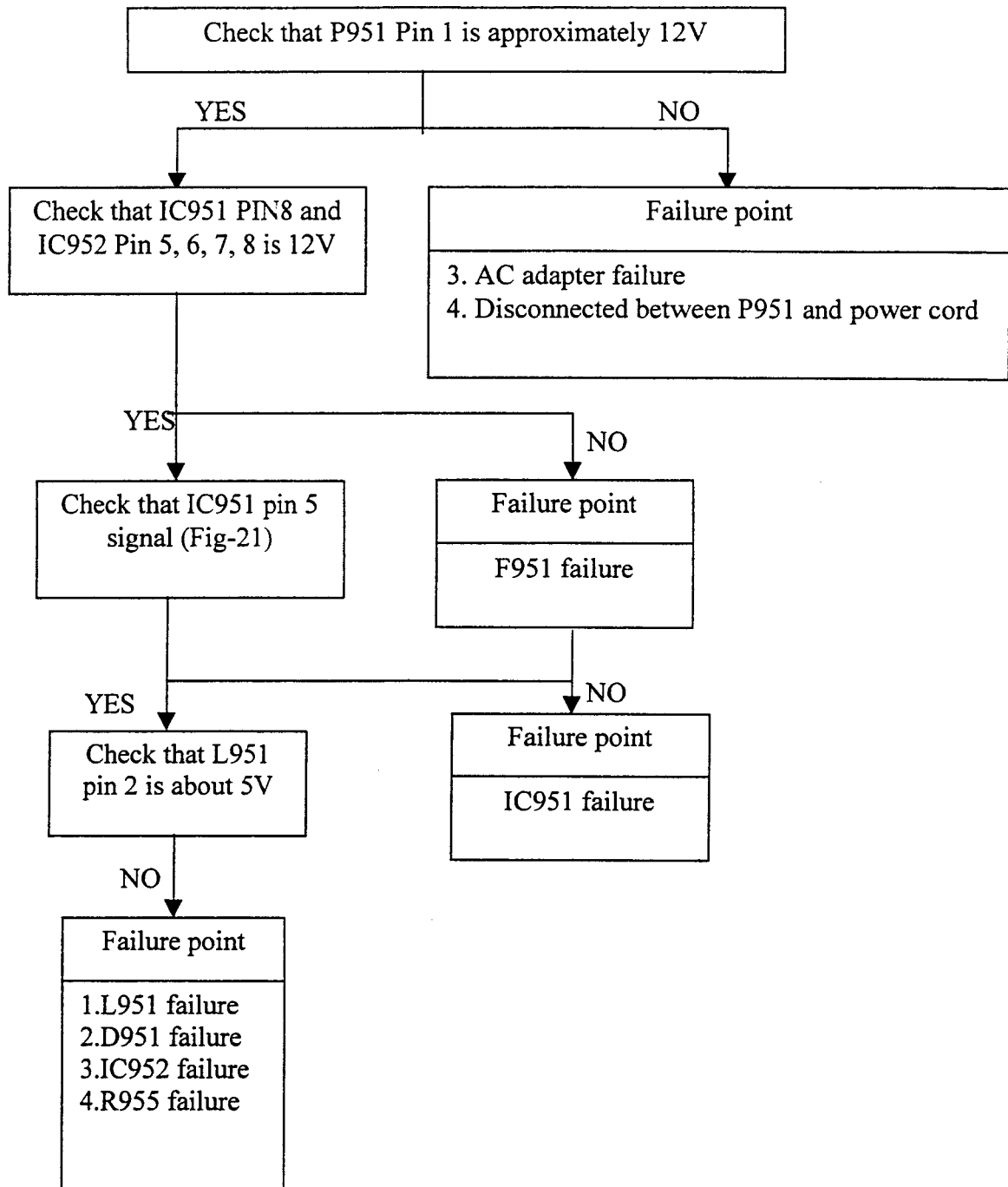
B10. A/D Not Operating



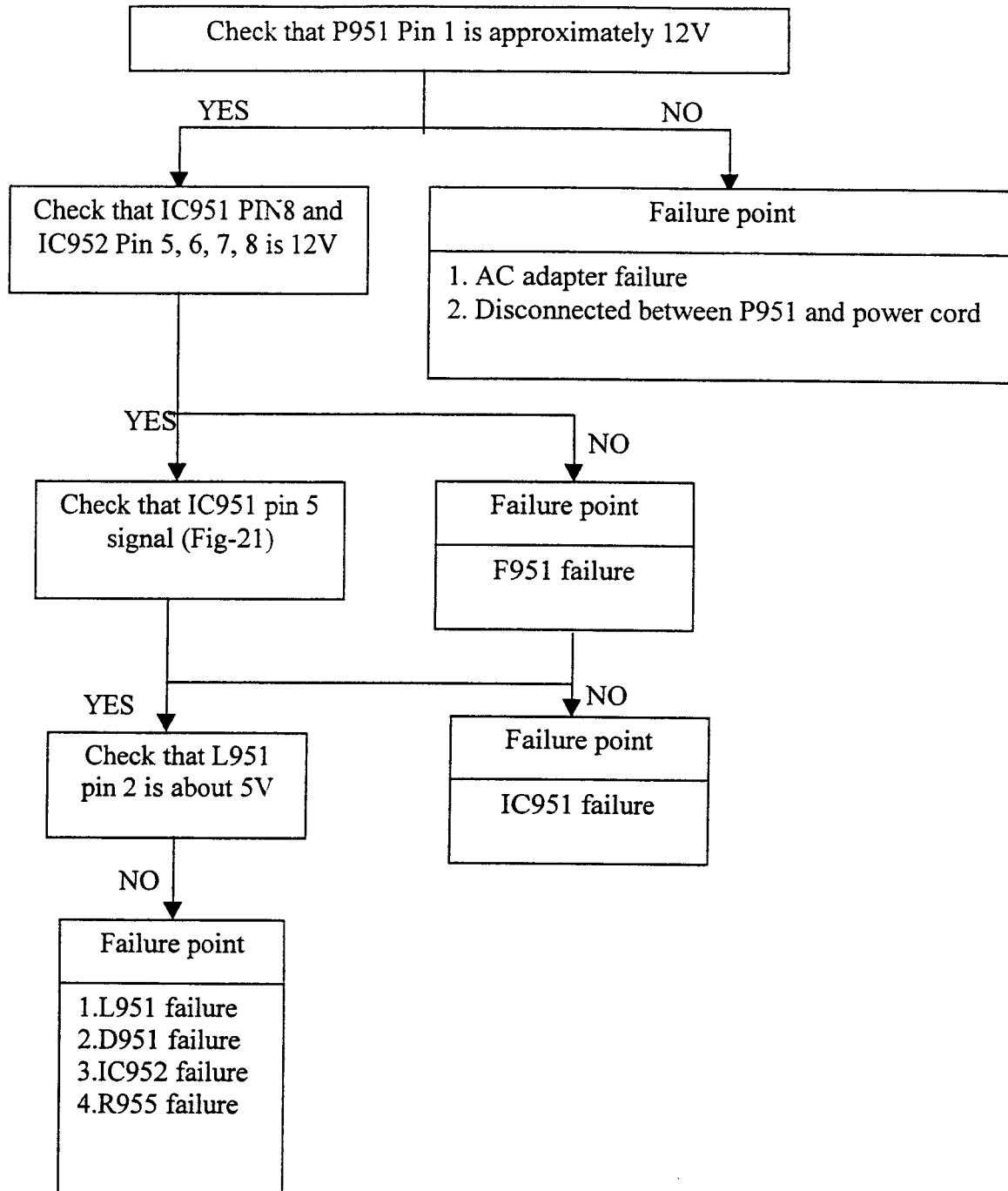
B11. No Video Display



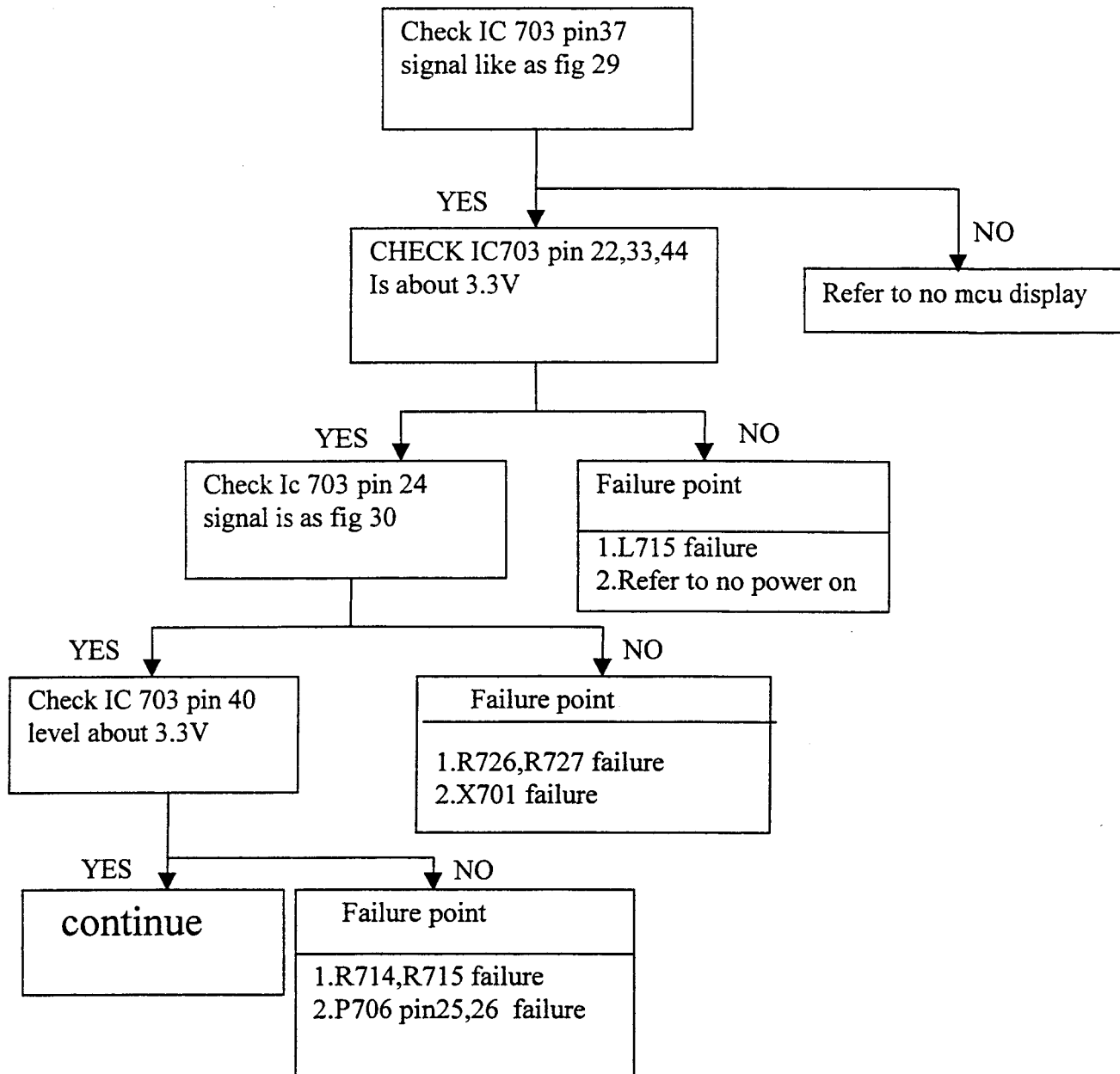
B12. No Power On



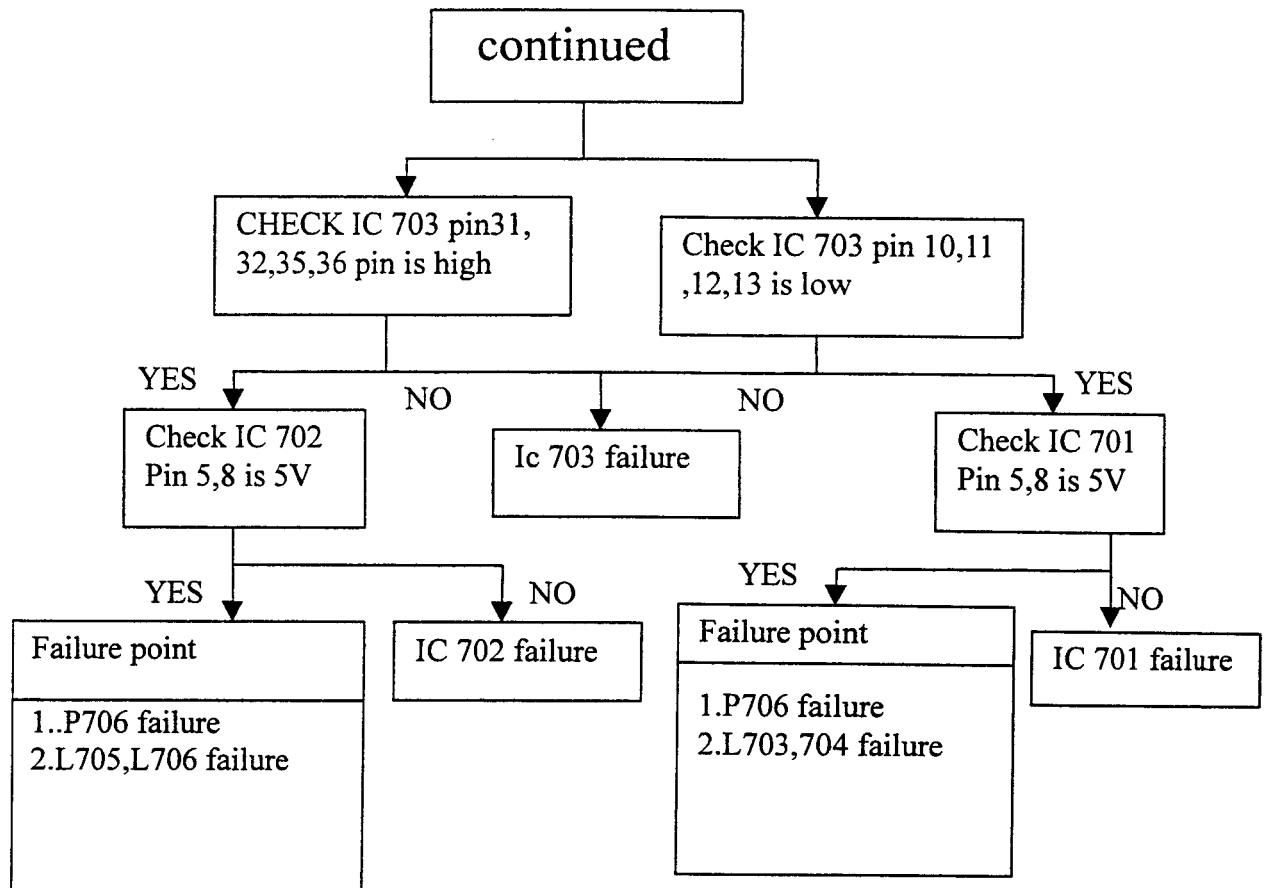
B12. No Power On



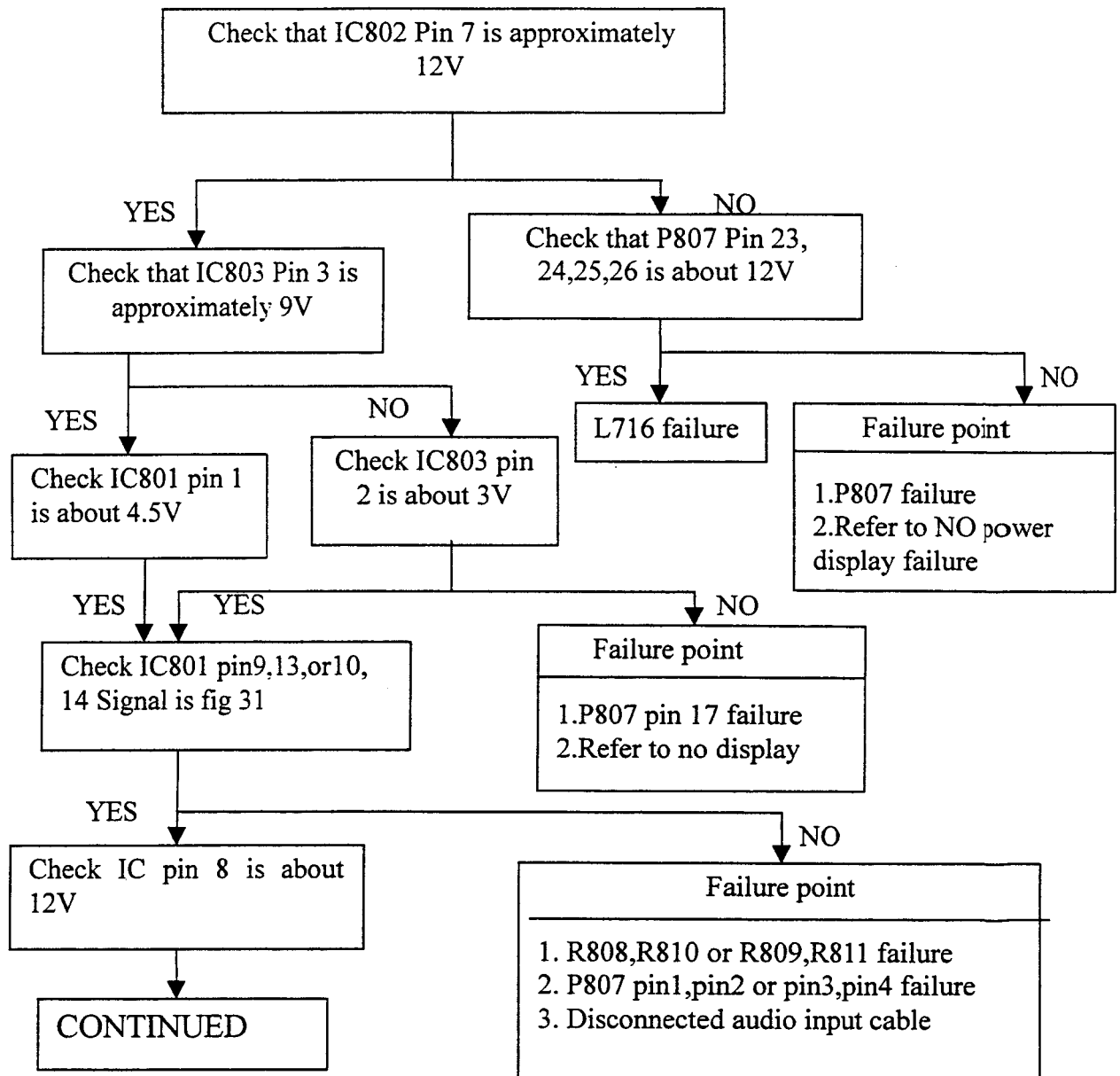
B13. USB NOT WORKING



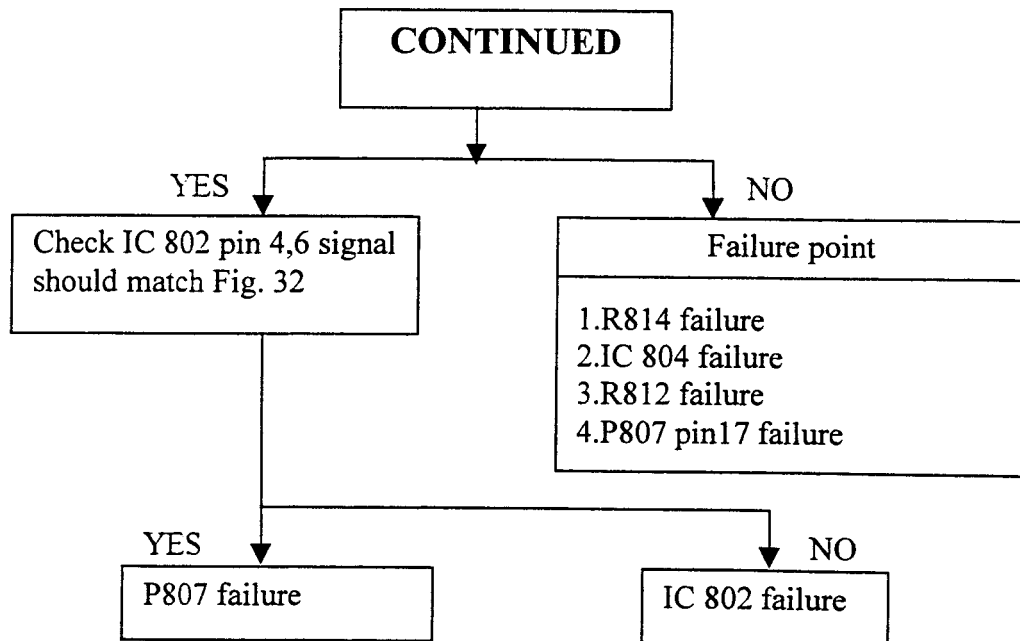
B13. USB NOT WORKING (continued)



B14. No Sound



B14. No Sound (continued)



VP181 Field Trouble Shooting Guide:

The VP181 is an extremely high-end solution, protects against obsolescence, and offers many, many features not found anywhere. This intense feature load, while valuable, comes at a price in added complexity during initial installation and use. In addition to standard Monitor / LCD Monitor troubleshooting guidelines, the following special cases may apply to VP181 field problems:

#	Problem Description	Solution	Analysis
1	No Video. Active Input is connected to Port A. LED is Orange.	1. Check that the video cable has pin 9 'floating' (no connection). The default cable has pin 9 'open'. 2. Port 'B' is unaffected by this issue, any cable is OK.	Input A is used for flash upgrading. When pin 9 is active (some video cards have +5 volts on this unused pin), the VP series monitor thinks it's going to get upgraded.
2	No Video. "Some" type of connection also present (weather active or not) on both DFP1 and DFP2 input.	1. Check active input is actually selected. Have user press the "INPUT" button on the top to toggle between the inputs.	Upon power up, if both DFP inputs are active, head will give bias to port 1.
3.	Buttons not functioning / No OSD.	1. The OSD Features are only applicable to an Analog input source. Digital DFP input does not require an OSD	This is by design.
4.	Dim Image.	1. Have user press the head's {BR +} button. 2. If Analog, check that CONT = MAX, Br = Mid. Use Shortcuts. 3. Check color temperature setting, default is 6500K setting.	
5.	No Sound.	1. Confirm correct connections. 2. Have user press {VOL+} key then press MUTE key to confirm if function is on or off. 3. Check Active Sound Input via OSD.	When user enter DPMS, MUTE state is saved.
6.	Poor Quality Image while in Analog Mode.	1. Have user set 60Hz at the panels native resolution via video card . 2. If Auto-Tune does not catch, user may re-adjust at any time by using OSD or by shortcut [1] and [2] at same time.	While compatible with frequencies up to 100Hz, 60Hz (or less) still results in the best video quality while in Analog mode. This is directly related to the quality of the input

			analog input signal.
7.	No Sound while using Digital Input	1. The base and head are separate and independent modules. However, there is a workaround: Keep an 'active' source connected to base, this will prevent the base from going to sleep (DPMS) and allow the sound to be heard. Obviously, no OSD is applicable to a digital input signal.	This is by design.
8.	Digital Input is garbled / no image.	1. Check all cabling, be sure they are <u>NOT</u> using a VPD180 cable, as this cable is non-standard. 2. Record user's exact video card, BIOS version. If OK in DOS mode, it's a driver problem from there.... 3. Some known issues with ATI cards; ATI and VS are both addressing.	Few standards active within Digital card industry with respect to power-on-sequencing.
9.	Poor Quality Image while in Less than native resolution.	1. Have user choose his desired 'scaling' size. Either 1:1, Full Screen, or FAR. Of course there is tradeoff's with each. 1:1 has best quality, but smallest size. 2. Have user choose his scaling filter, under "Sharpness" menu. Bias towards either sharp or soft according to user preference. "Sharp" will give better text quality at expense of graphics. "Soft" is opposite.	
9.	Everything on screen looks too big.	1. Check if user has been playing with the "Zoom" control. To restore go into zoom control press [DOWN] and [UP] at same time. If already at minimum, not monitor problem.	
10.	I can't choose between S-Video and RCA Composite Video	1. No you can't. Only one video can be active, S-VIDEO takes	This is by design to due to limitation of available

	Input!	precedence.	audio inputs.
11.	Video Looks Fuzzy.	1. Follow all procedures in #8 above. 2. Have user check "HUE/TINT" and "COLOR SATURATION" controls in color menus	While every effort has been made to minimize this affect, Full screen video has some amount of fuzziness due to the fact it is being scaled up many times over it's default image size. This affect is slightly worse on the 18" due to its larger size and larger native resolution.
12.	Video Looks Dark.	1. Follow steps in #4 above. 2. For Video, it sometimes helps to set BR=MAX.	
13.	VPXXX Looks bad with Laptops.	1. Follow normal laptop video quality procedures. Check: a. Laptop is outputting ONLY to monitor not to monitor AND internal LCD. b. Set refresh rate to 60Hz or lower. c. Set resolution to native. d. Perform AUTO TUNE.	Laptop video signal quality is usually bad. Laptops are also more susceptible to 'drift' forcing more 'auto-tunes'.
14.	USB		USB is extremely configurable due to the use of 2 hubs. They may be operated 'linked-together' or independently. Adjust to best case for this customer.
15.	Sync on Green / Composite Sync Image looks distorted on top	1. Initial production units have an incompatibility with 'non-serrated Sync-On-Green', check serial number against ECN/ECR record. 2. If user has "Serrated" Source, should be no problem.	Solution is upgraded 9884 ADC IC.
16.	I live in Brazil, and my video doesn't work!	1. Known incompatibility with Brazilian PAL-M video.	Problem with Samsung video decoder, there is no solution.
17.	I want to wall mount!	1. VP151/181 is compatible with standard industry wall mounts (VESA). Remove the neck cover and round plate to gain access to	

		mounting area. 2. Wall mount is generally best with DIGITAL source, however, Analog can still be used if the base is stored near the computer. The user will have to buy a long DFP to DFP cable to connect the analog base to the digital head.	
18.	How do I use Portrait Mode?	1. Perfect Portrait Software is included, this is the same as other VS products.	
19.	There is a funny 'blue' box that appears in the top left corner	1. The VP181 displays the active input briefly during a mode change.	This is by design.
20.	Is HOSD available?	1. No, a HID USB device is not present.	This is by design.
21.	Panel Protection / Touch Panel	1. VP151 has space for an optional 3rd party user-installable panel protection. VS may offer this in the future also. 2. VP181 initially doesn't have, but 3rd party integration may be available like any panel.	
22.	[Support Only] How do I check the internal firmware version?	1. Press [VOL +] and [UP ARROW] at the same time.	DO NOT OFFER CUSTOMER UPGRADE as service is required. Check with repair / engineering for this issue.
23.	Sound Quality is poor		Courtesy Audio, by design.
24.	I connected the microphone jack to my PC but I can't record!	1. VP181 does not have a built in microphone, only a microphone 'pass-through'. The user still requires an external microphone.	This is by Design.
25.	I have some difficulty rotating to portrait mode.	1. Tilt the head, then rotate.	This is by design to protect 'bumping' against the base.
26.	I see "GHOST" images of previous screens (i.e. BURN IN)	1. The Hitachi panel is more susceptible to this issue due to it's use of new SuperIPS technology which allows the highest viewing angle. Use a screensaver.	1. Hitachi is making incremental improvements in this area. Will continue to 'get better' over the

		2. Leave panel 'OFF' for an extended period of time to remove any residual burn-in. 3. The displaying of a "FULL WHITE" may also help allieviate the problem.	next several months into 1Q00. 2. Rest assured, while difficult to remove at times, the affect is not permanent.
27.	There is a small hole on the rear left of the base, what's it for?	1. It's a KENNSINGTON SECURITY PORT. Go to COMP-USA and ask about security accessories for this feature.	
28.	No Power. No ORANGE LED, no Green LED.	1. Check all connections, turn ON. Be sure DC Pass-through cable is securely connected. 2. Plug DC adapter into Head only and try again, if successful on Head, but not on base. base is the troublemaker. 3. A small percentage of units from initial production runs are more likely to fail due to surge when connecting a plugged in DC adapter. Problem has been fixed. Trouble component is inline fuse in base's power circuit.	
29.	Poor Quality Image while in > native resolution.	1. Switch to 60Hz. 2. Understand that downscaling will lose image detail. Use native if possible but > native is OK with this known limitation.	1. The VP181 is the first VS product capable of quality "DOWNSCALING" a higher than native resolution (1280 x 1024 = 15", 1600 x 1200 = 18").
30.	Are upgrades available for my VP181?	1. The VP181 is easily upgradeable, however, do not offer this to any customer unless waranted. Check with repair / Engineering for feasibility.	1. Upgrade process is easy, but does require a special hardware adapter.
31.	HDTV!	1. The VP181 is compatible with most HDTV timings. A native RGB signal or suitably adapted from YPBPR to RGB Separate is required.	

		THE VP181 does not have a Tuner of any kind.	
32.	My PIP / OSD is not correctly oriented while using the portrait software!	1. The PIP can not rotate. This feature may become available later, and perhaps by software upgrade. Do not offer to customer. 2. The OSD cannot rotate and never will in this architecture.	
33.	Poor Image quality in PIP	1. Set panel to native resolution.	PIP image quality is best in native resolution. Lower DPI is a result of less than native resolution.
34.	PIP is too small	1. Set panel to native resolution 2. Set PIP size to "LARGE".	Available sizes are approximately the same in each resolution. Largest size with best image quality is at native. If still too small, user has to switch to full screen video.
35.	Not much difference in PIP size in some resolutions.		Design tradeoff. This is correct with some resolutions, especially > native. Best case is native resolution.
36.	Low Audio Volume, VP181 is set to MAX.	1. Check source audio out volume setting. Increase as necessary.	Remember, courtesy audio...
37.	I missed my BIOS / Boot-UP screen during boot-up.	1. Have the customer 'blindly get to this screen' (i.e. remove keyboard connector, or press F2 or DEL or something..varies by Motherboard) so that this screen is stable long enough for the VPXXX to 'catch' the timing. Once memorized, mode change time will be competitive to all other devices.	2. VP181 has 10 "memories" arranged in FIFO configuration. If full, a unrecognized timing has to be 're-remembered'. 3. Each timing is also independently tied to the input port.
38.	Defective Pixels	1. Handle as per std. ViewSonic policy.	1. VP181 uses LCD technology, pixel defects are possible.
39.	How do I display PIP of my computer while watching Video?	1. Not possible. PIP only works with a video source. It does not work with an RGB source.	This is by design.

40.	Why can't I change to a digital Input from the OSD?	1. The OSD only controls inputs going into the ANALOG Base. It can not control the n=2 digital inputs in the base.	2. The Base and the Head are separate and independent modules. This is by design.
41.	I press the "INPUT" button, but I can not change to my Video or Analog PC input!	1. The "INPUT" Button only affects the n=2 Digital Inputs located on the head. It can not control the n=2 Analog RGB and n=1 Composite Video Input located on the base.	2. The Base and the Head are separate and independent modules. This is by design.
42.	I always have to 'readjust the phase control' or 'AutoTune' after a mode change! This is irritating!	1. Set to 60Hz. 2. Some low quality video cards are not stable after their own mode change. 3. Use "AutoTune" shortcut, [1] + [2]	1. Suggest video card change. SXGA timing is much more sensitive.

Section 5 - ADJUSTMENT PROCEDURE

CONTENTS

- A. INSTRUMENT ALIGNMENT**
 - 1. PREPARATION FOR MANUAL ALIGNMENT**
 - 2. COLOR TEMPERATURE ALIGNMENT**
 - 3. FACTORY PRESET SETTING**

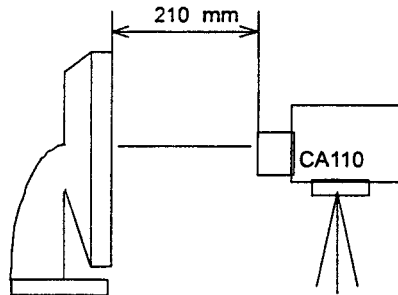
1. PREPARATION FOR MANUAL ALIGNMENT

1.1 THE ALIGNMENT PROCEDURE IS PERFORMED AFTER UNIT HAS BEEN COMPLETELY ASSEMBLED AND BEFORE UNIT INSPECTION.

1.2 BEFORE UNIT IS ALIGNED, UNIT NEEDS TO BE BURNED IN FOR 30min.

1.3 MEASURING EQUIPMENT USED:

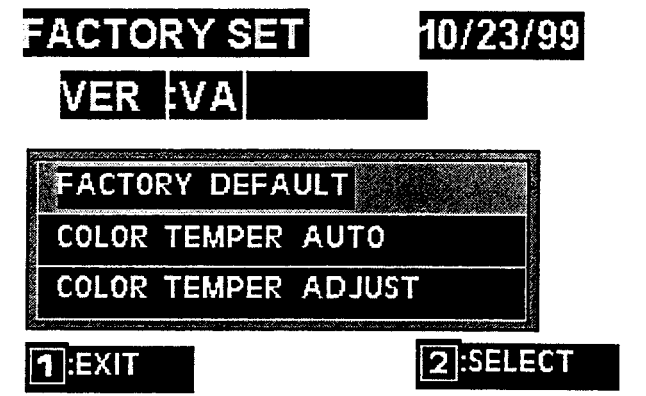
PRE-PROGRAMMED CHROMA, 2136 OR EQUIVALENT PRODUCTS.
COLOR METER—MINOLTA, CA110 OR EQUIVALENT PRODUCTS.



1.4 METHOD TO ENTER/EXIT SERVICE MODE

1.4.1 PRESS “VOL+” AND “▲” KEY ON THE BASE SIMULTANEOUSLY WHILE THE UNIT IS POWERED ON.

1.4.2 TO INSURE THE MONITOR IS IN THE SERVICE MODE, VERIFY THAT THE FOLLOWING OSD IMAGE IS DISPLAYED ON THE SCREEN.

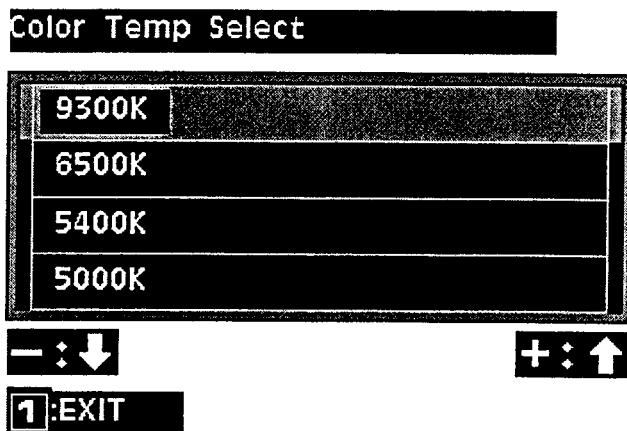


IF NOT, FOLLOW THE PROCEDURE DESCRIBED IN SECTION 1.4.1 AGAIN TO ENTER THE SERVICE MODE.

1.4.3 IN THE SERVICE MODE, PRESS “1” KEY. THE MONITOR WILL EXIT SERVICE MODE AND ENTER THE NORMAL DISPLAY MODE.

1.5 METHOD TO ENTER/EXIT MANUAL COLOR ALIGNMENT MENU

WHILE IN THE SERVICE MODE, SELECT THE "COLOR TEMPER ADJUST" ITEM ON THE SERVICE OSD MENU. IT WILL DISPLAY THE FOLLOWING COLOR TEMPERATURE ADJUST MENU.



USE "UP" AND "DOWN" TO MOVE CURSOR BETWEEN ITEMS "9300", "6500", "5400" AND "5000". PRESS "2" TO SELECT WHICH COLOR TEMPERATURE TO BE ADJUSTED. IT WILL SHOW FOLLOWING MENU:

USE "2" KEY TO SELECT R, G, OR B, DRIVER, AND "UP" OR "DOWN" KEY TO ADJUST THE R, G, OR B VALUE CORRESPONDING TO THE SELECTED ITEM.



2. COLOR TEMPERATURE ALIGNMENT

2.1 9300°K ALIGNMENT

- 2.1.1 USE LEFT OR RIGHT KEY TO MOVE CURSOR TO 9300 COLOR TEMPERATURE. THEN PRESS "2" KEY TO SELECT 9300 COLOR TEMPERATURE ADJUSTMENT.
- 2.1.2 USE "2" TO MOVE CURSOR TO GREEN-DRIVER AND THEN PRESS "UP" OR "DOWN" KEY TO ADJUST IT TO MEET LUMINANCE
 $Y = 70 \pm 5 \text{ CD/M}^2$.
- 2.1.3 USE "2" TO MOVE CURSOR TO R-DRIVER OR G-DRIVER OR B-DRIVER AND THEN PRESS "UP" OR "DOWN" KEY TO ADJUST IT TO MEET FOLLOWING CHROMATICITY SPEC.
 $9300^\circ\text{K} \rightarrow x = 0.283 \pm 0.005, y = 0.311 \pm 0.005 \quad Y = 87 \text{ CD/M}^2$.

2.1.4 PRESS "1" TO EXIT 9300 COLOR TEMPERATURE ADJUSTMENT AND DO ANOTHER COLOR TEMPERAUTE ADJUSTMENT. WHEN EXIT SERVICE MODE OSD MENU, THE ABOVE RESULT R.G.B GAIN WILL AUTOMATICALLY SAVE VALUE TO CONTRAST 60

2.2 6500°K ALIGNMENT

- 2.2.1 USE LEFT OR RIGHT KEY TO MOVE CURSOR TO 6500 COLOR TEMPERATURE. THEN PRESS "2" KEY TO SELECT 6500 COLOR TEMPERATURE ADJUSTMENT.
- 2.2.2 USE "2" TO MOVE CURSOR TO GREEN-DRIVER AND THEN PRESS "UP" OR "DOWN" KEY TO ADJUST IT TO MEET LUMINANCE
 $Y = 70 \pm 5 \text{ CD/M}^2$.
- 2.2.3 USE "2" TO MOVE CURSOR TO R-DRIVER OR G-DRIVER OR B-DRIVER AND THEN PRESS "UP" OR "DOWN" KEY TO ADJUST IT TO MEET FOLLOWING CHROMATICITY SPEC.
 $6500^\circ\text{K} \rightarrow x = 0.313 \pm 0.005, y = 0.329 \pm 0.005 \quad Y = 90 \text{ CD/M}^2$.
- 2.2.4 PRESS "1" TO EXIT 9300 COLOR TEMPERATURE ADJUSTMENT AND DO ANOTHER COLOR TEMPERAUTE ADJUSTMENT. WHEN EXIT SERVICE MODE OSD MENU, THE ABOVE RESULT R.G.B GAIN WILL AUTOMATICALLY SAVE VALUE TO CONTRAST 60

2.3 5400°K ALIGNMENT

- 2.3.1 USE LEFT OR RIGHT KEY TO MOVE CURSOR TO 5400 COLOR TEMPERATURE. THEN PRESS "2" KEY TO SELECT 5400 COLOR TEMPERATURE ADJUSTMENT.
- 2.3.2 USE "2" TO MOVE CURSOR TO GREEN-DRIVER AND THEN PRESS "UP" OR "DOWN" KEY TO ADJUST IT TO MEET LUMINANCE
 $Y = 70 \pm 5 \text{ CD/M}^2$.
- 2.3.3 USE "2" TO MOVE CURSOR TO R-DRIVER OR G-DRIVER OR B-DRIVER AND THEN PRESS "UP" OR "DOWN" KEY TO ADJUST IT TO MEET FOLLOWING CHROMATICITY SPEC.
 $5400^\circ\text{K} \rightarrow x = 0.332 \pm 0.005, y = 0.348 \pm 0.005 \quad Y = 90 \text{ CD/M}^2$.
- 2.3.4 PRESS "1" TO EXIT 9300 COLOR TEMPERATURE ADJUSTMENT AND DO ANOTHER COLOR TEMPERAUTE ADJUSTMENT. WHEN EXIT SERVICE MODE OSD MENU, THE ABOVE RESULT R.G.B GAIN WILL AUTOMATICALLY SAVE VALUE TO CONTRAST 60

2.4 5000°K ALIGNMENT

2.4.1 USE LEFT OR RIGHT KEY TO MOVE CURSOR TO 5000 COLOR TEMPERATURE, THEN PRESS “2” KEY TO SELECT 5000 COLOR TEMPERATURE ADJUSTMENT.

2.4.2 USE “2” TO MOVE CURSOR TO GREEN-DRIVER AND THEN PRESS “UP” OR “DOWN” KEY TO ADJUST IT TO MEET LUMINANCE
 $Y = 70 \pm 5 \text{ CD/M}^2$.

2.4.3 USE “2” TO MOVE CURSOR TO R-DRIVER OR G-DRIVER OR B-DRIVER AND THEN PRESS “UP” OR “DOWN” KEY TO ADJUST IT TO MEET FOLLOWING CHROMATICITY SPEC.

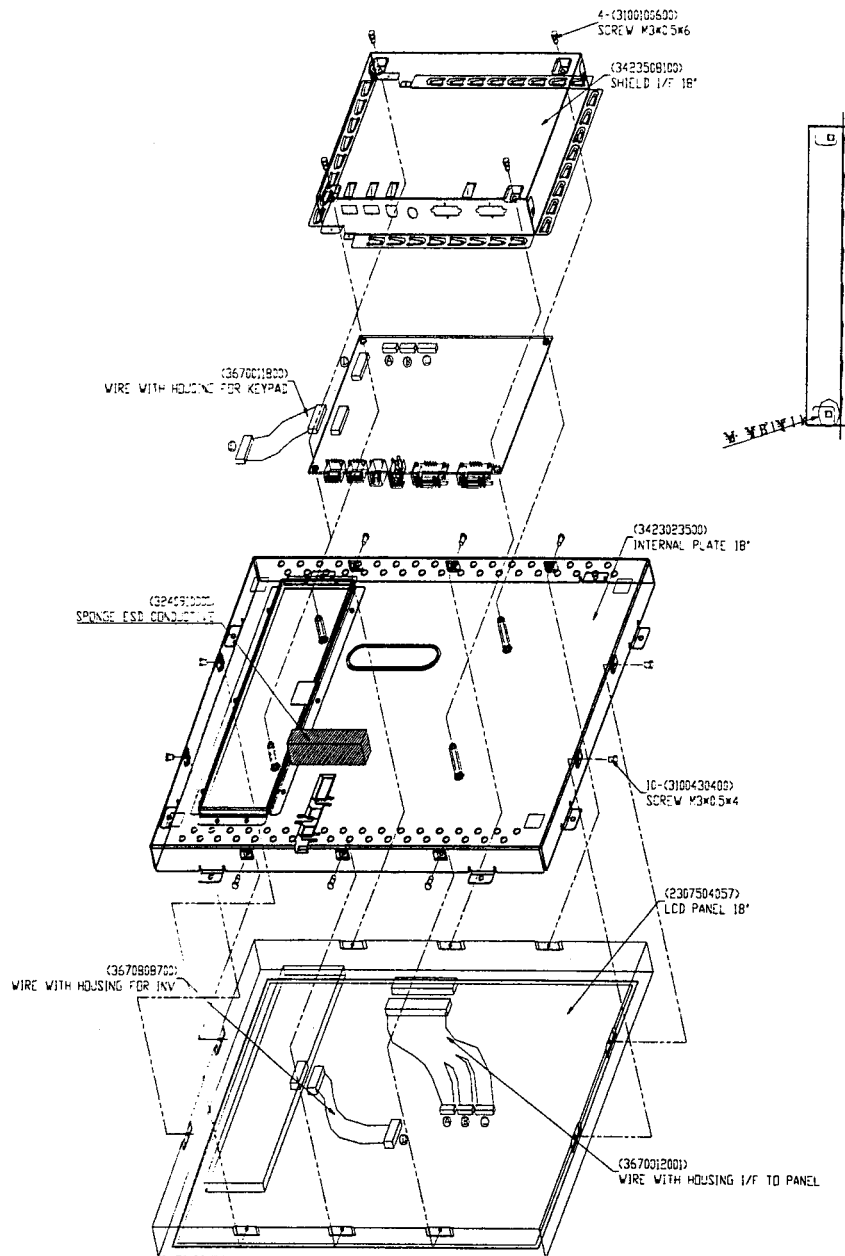
$5000^\circ\text{K} \rightarrow x = 0.346 \pm 0.005, y = 0.359 \pm 0.005 \quad Y = 90 \text{ CD/M}^2$.

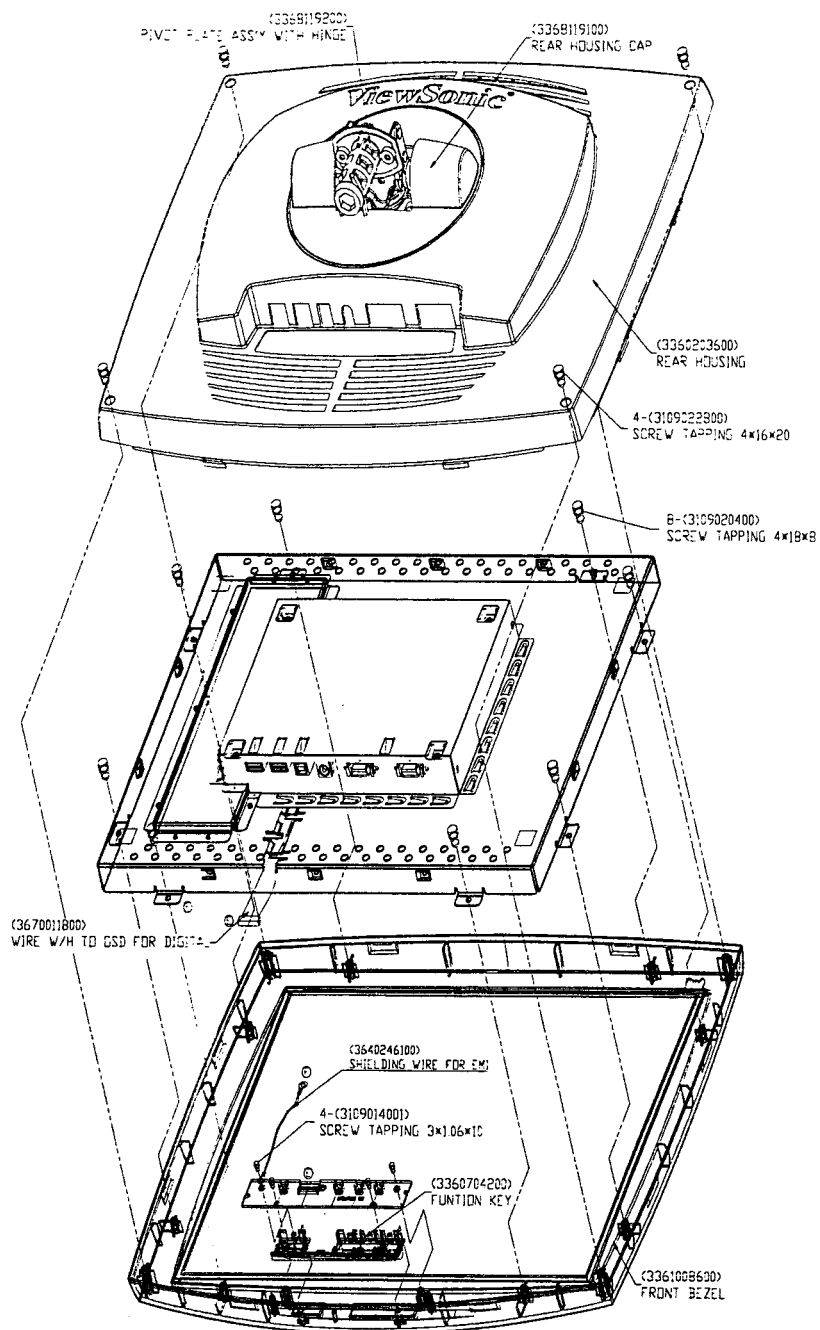
2.4.4 PRESS “1” TO EXIT 9300 COLOR TEMPERATURE ADJUSTMENT AND DO ANOTHER COLOR TEMPERAUTE ADJUSTMENT. WHEN EXIT SERVICE MODE OSD MENU, THE ABOVE RESULT R.G.B GAIN WILL AUTOMATICALLY SAVE VALUE TO CONTRAST 60

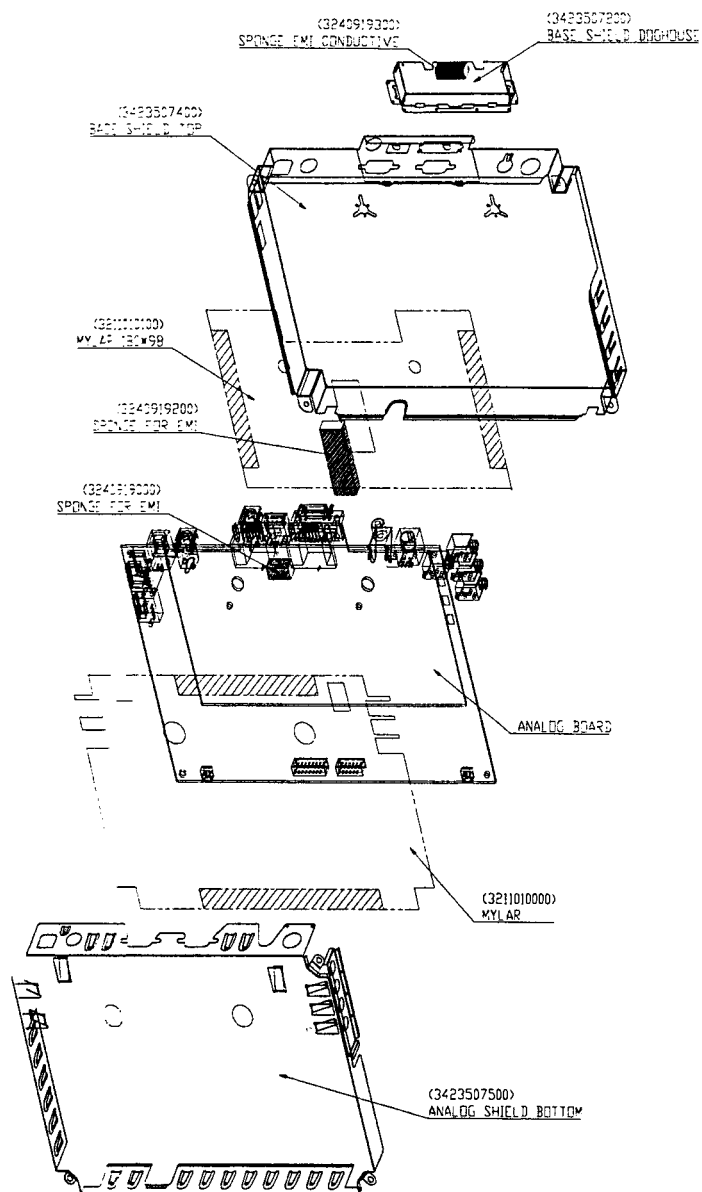
3. FACTORY PRESET SETTING

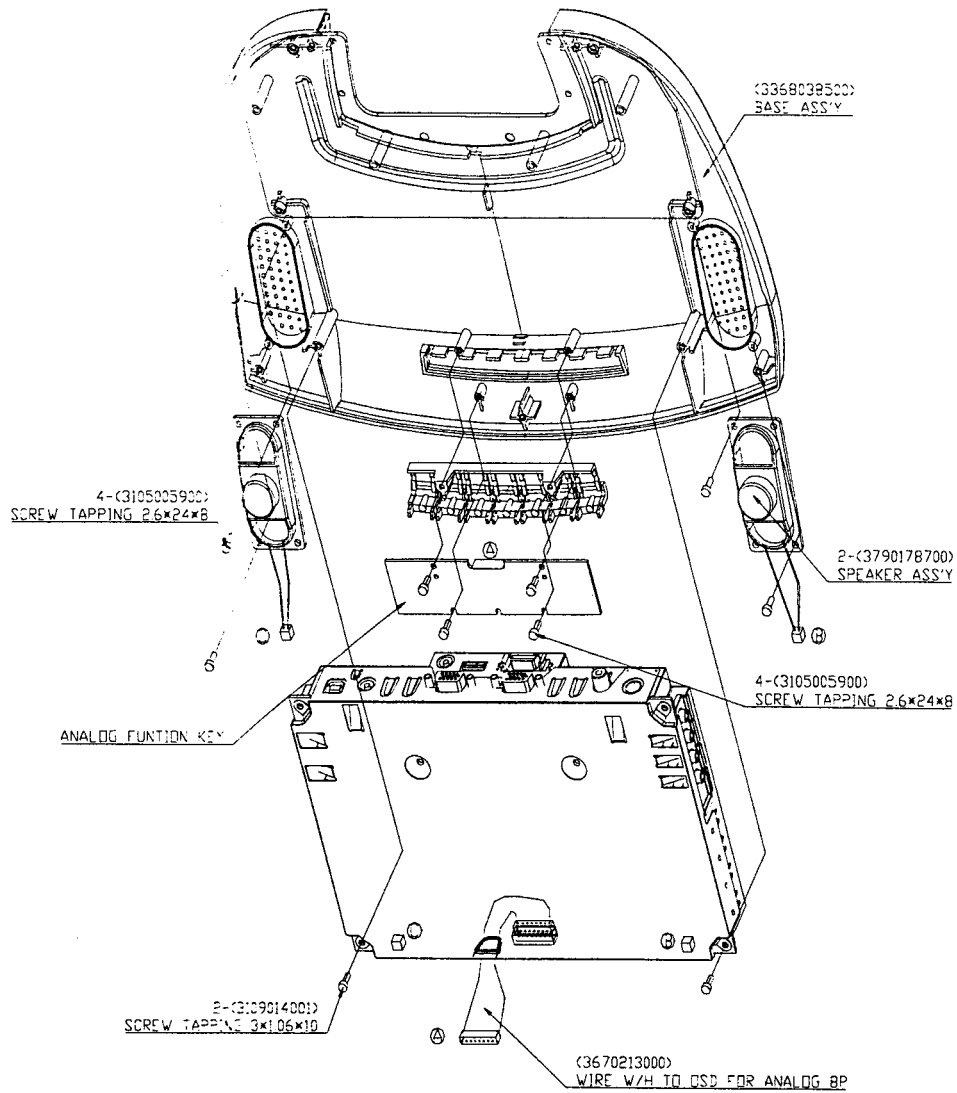
3.1 IN SERVICE MODE OSD MAIN MENU, SELECT FACTORY DEFAULT SETTING. PRESS “2” TO COFIRM THE SELECTING.

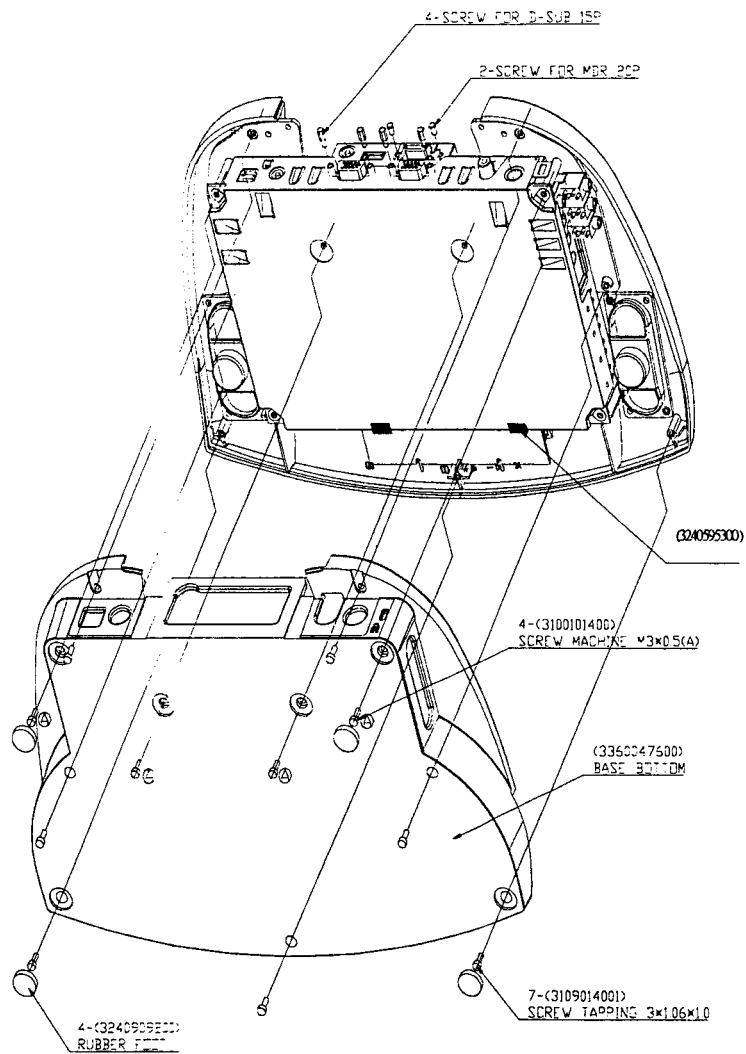
Section 6 - Mechanical Assembly

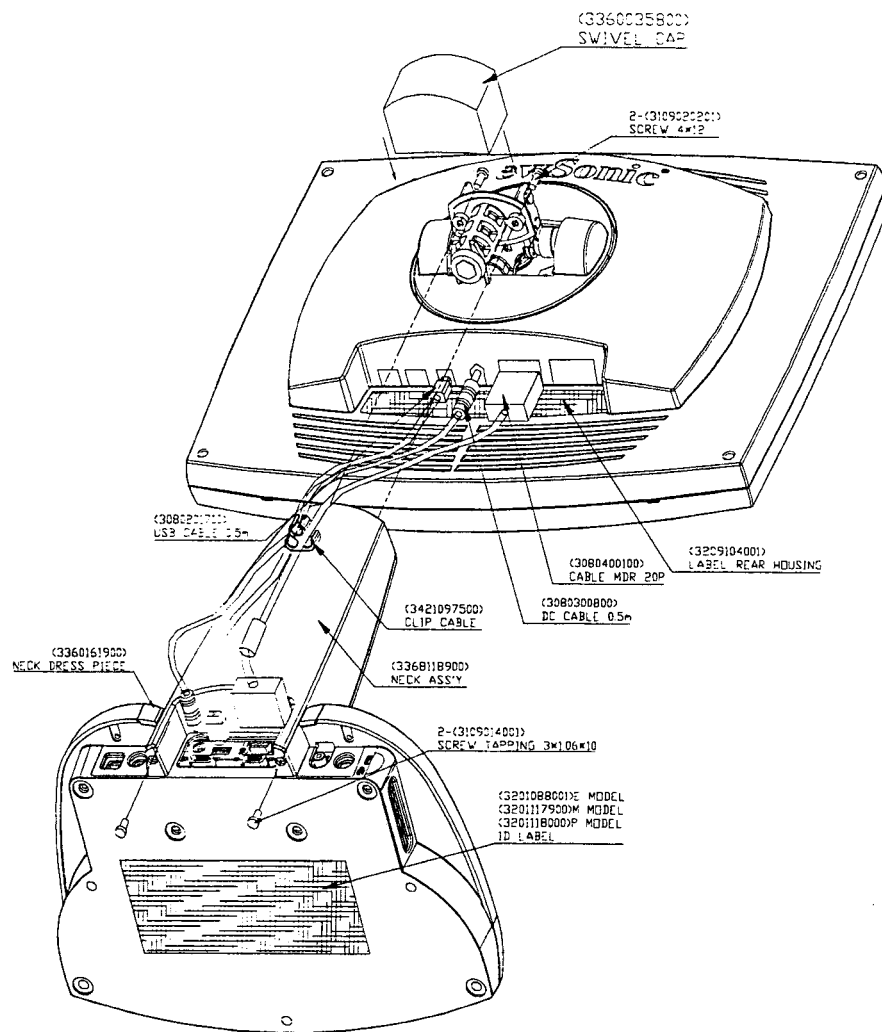












Section 7 - Recommended Service Parts List

Mechanical

99.11.25

1	0993006100		ADAPTOR DC 12V 80W		1	PCE	
2	2307504057	ITSX94	LCD 18.1" SXGA TFT LVDS		1	PCE	
3	3075303928		CONN DVI TO MOR ADAPTOR		1	PCE	
4	3080107200		POWER CORD 3P USA		1	PCE	
5	3080107300		POWER CORD 3P EURO		1	PCE	
6	3080107400		POWER CORD 3P CHINA		1	PCE	
7	3080113500		POWER CODE JAPAN 3PIN		1	PCE	
8	3080115500		POWER CORD FOR AUSTRALIAN		1	PCE	
9	3080201700		CABLE USB WIRE 0.5m		1	PCE	
10	3080201800		CABLE USB WIRE 1.8m		1	PCE	
11	3080300800		SINGLE CABLE DC INPUT 500mm		1	PCE	
12	3080301100		CABLE RCA 1.8m		1	PCE	
13	3080301900		CABLE RCA/STEREO 1.8m		1	PCE	
14	3080302101		AUDIO CABLE		1	PCE	
15	3080302600		SIGNAL CABLE MAC ADAPTOR D-SUB		1	PCE	
16	3080400100		CABLE, MDR-20 FOR DFP 500mm		1	PCE	
17	3080400901		SIGNAL CABLE		1	PCE	
18	3100100600		SCREW MACHINE M3*0.5*6		4	PCE	I/F&SHEELD TO INST.
19	3100101400		SCREW MACHINE M3*0.5*14		4	PCE	BASE TOP TO BOTTOM
20	3100430400		SCREW MACHINE M3*0.5*4.0		10	PCE	PANEL TO INST
21	3102460600		SCREW MECHINE M4*0.7*6 TIN		5	PCE	NECK&BASE
22	3105005900		SCREW TAPPING 2.6*24*8		4	PCE	OSD TO BASE
23	3105005900		SCREW TAPPING 2.6*24*8		4	PCE	SPEAKER TO BASE
24	3106150600		SCREW TAPING 3*12		4	PCE	HEAD KEYPAD TO BEZEL
25	3109014001		SCREW TAPPING 3*1.06*10		2	PCE	I/F&SHEELD TO BASE
26	3109014001		SCREW TAPPING 3*1.06*10		7	PCE	BASE TOP TO BOTTOM
27	3109014001		SCREW TAPPING 3*1.06*10		2	PCE	NECK TO BASE
28	3109020201		SCREW TAPPING 4*18*16		2	PCE	NECK TO HEAD
29	3109020400		SCREW TAPPING 4*18*8		8	PCE	
30	3109022800		SCREW TAPPING 4*16*20		4	PCE	FRONT & REAR COVER
31	3200462800	DA-1565SB	NAME PLATE 3-Bird Logo AL+PC		1	PCE	
32	3201088001		LABEL ID ON BASE(EUROPE) VP181		1	PCE	
33	3201117900		LABEL ID ON BASE (USA)		1	PCE	
34	3201118000		LABEL ID ON BASE (PACIFIC,ASIA		1	PCE	

Section 7 - Recommended Service Parts List

35	3209104001		LABEL REAR BACK VP181 VIEWSONI		1	PCE	
36	3209104800		BAR CODE LABEL (VIWSONIC)		1	PCE	
37	3211010000		MYLAR T.1 MD-510HPV/MD-810BPV		1	PCE	
38	3211010100		MYLAR 183*98		1	PCE	
39	3221101500	PP47(914M) W=76	TAPE W=76 PP47 4P		2	MTR	
40	3240595300		COPPER TAPE		2	PCE	
41	3240909200		RUBBER FOOT		4	PCE	
42	3240910000		SPONGE ESD CONDUCTIVE		1	PCE	
43	3240919000		SPONG EMI CONDUCTIVE 10*5*14		1	PCE	
44	3240919200		SPONG EMI CONDUCTIVE 14*5*34		1	PCE	
45	3240919300		SPONGE EMI CONDUCTIVE 6*6*20		1	PCE	
46	3360035800		SWIVEL CAP		1	PCE	
47	3360047600		BASE BOTTOM		1	PCE	
48	3360161900		NECK DRESS PIECE		1	PCE	
49	3368024700		FRONT BEZEL ASS'Y 18"		1	PCE	
50	3360704200		FUNCTION KEY FOR BEZEL 18"		1	PCE	
51	3361008600		FRONT BEZEL 18" PC+ABS		1	PCE	
52	3368038500		BASE ASS'Y		1	PCE	
53	3360047500		BASE TOP		1	PCE	
54	3360058700		FUNTION KEY FOR BASE		1	PCE	
55	3423021600		PLATE BASE SPCC		1	PCE	
56	3368118900		NECK ASSY 18"		1	PCE	
57	3421097500		CLIP CABLE		1	PCE	
58	3368119000		REAR HOUSING ASSY 18"		1	PCE	
59	3360203600		REAR COVER 18" PC+ABS		1	PCE	
60	3368119100		REAR HOUSING CAP PC+ABS 18"		1	PCE	
61	3368119200		PIVOT PLATE ASSY WITH HINGE 18		1	PCE	
62	3423023500		PLATE INTERNAL SECC 18"		1	PCE	
63	3423507200		SHIELD BASE DOGHOUSE		1	PCE	
64	3423507400		SHIELD BASE TOP SPTE		1	PCE	
65	3423507500		SHIELD ANALOG BOTTOM SPTE		1	PCE	
66	3423508100		SHIELD I/F 18"		1	PCE	
67	3427100400		GASKET COPPER FOR SWITCH		4	PCE	
68	3429014200		CLIP COPPER		6	PCE	
69	3500216800		END BLOCK R-SIDE 18"		1	PCE	

Section 7 - Recommended Service Parts List

70	3500216900		END BLOCK L-SIDE 18"		1	PCE	
71	3510320001		CARTON 18" (VIEWSONIC)500*305*		1	PCE	
72	3520098500		PE BAG 600*720*.06		1	PCE	
73	3520297000		MANUAL PACKING ASSY VP181		1	PCE	
74	3500541300		PE BAG 178*288*0.03T		1	PCE	
75	4119800200		CD DRIVER VIEWSONIC		1	PCE	
76	4119801101		PORTRAIT CD DRIVER		1	PCE	
77	5011028201		MANUAL VP181 14/*210		1	PCE	
78	5011202700		DOCUMENT CARD TCO95		1	PCE	
79	3670011800		WIRE W/H TO OSD FOR DIGITAL 8P		1	PCE	
80	3670012000		WIRE WITH HOUSING I/F TO PANEL		1	PCE	
81	3670213000		WIRE W/H TO OSD FOR ANALOG		1	PCE	
82	3670808700		WIRE WITH HOUSING		1	PCE	

ANALOG BOARD (5600091801)

83	2610371153	ADG774BRQ	IC QUAD 2:1 MUX PQ-16		1	PCE	IC601
84	2610371153	ADG774BRQ	IC QUAD 2:1 MUX PQ-16		1	PCE	IC602
85	2610371153	ADG774BRQ	IC QUAD 2:1 MUX PQ-16		1	PCE	IC615
86	2606002091	EL4583CS	IC SYNC SEP 50% SLICE,H-OUT SO		1	PCE	IC614
87	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC511
88	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC514
89	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC515
90	2440046017	FDS9412	FET 30V 7.9A	100%	1	PCE	IC520
91	2440046031	SI4412DY	FET 30V 7A SO-8	0%	1	PCE	IC520
92	2440046017	FDS9412	FET 30V 7.9A	100%	1	PCE	IC521
93	2440046031	SI4412DY	FET 30V 7A SO-8	0%	1	PCE	IC521
94	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC608
95	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC609
96	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC613
97	2500121020	PQ2TZ15	IC REGU 2.5V 1.0A SC-63-5P		1	PCE	IC510
98	2450018031	SI9933DY	FET -20V -2A SO-8P	100%	1	PCE	IC611
99	2450002032	FW114	FET -20V -3A SOIC-8(D)	0%	1	PCE	IC611
100	2450013132	FW113-TL	FET -30V -5A SOP-8	0%	1	PCE	IC611
101	2540233024	LTC1470	IC PCMCIA 3.3V/5V SWITCH SO-8P		1	PCE	IC509
102	2500115018	LTC1624CS8	IC REGULATOR D/D SO-8P		1	PCE	IC951
103	2440046017	FDS9412	FET 30V 7.9A	100%	1	PCE	IC952
104	2440046031	SI4412DY	FET 30V 7A SO-8	0%	1	PCE	IC952
105	2816701000	SIQ125-100	CHOKE SMT 10uH 4A		1	PCE	L951
106	2540218143	AD9884KS-140	IC A/D CONVERTER 100MPS MQFP-128	100%	1	PCE	IC607

Section 7 - Recommended Service Parts List

107	2540218343	AD9884AKS-140	IC A/D CONVERTER 100MPS MQFP-128	0%	1	PCE	IC607
108	2600006703	MM74HC14M	IC HEX-INV. SO-14PIN	100%	1	PCE	IC603
109	2600006706	MC74HC14AD	IC HEX-INV. SO-14PIN	0%	1	PCE	IC603
110	2600006707	PC74HC14T	IC HEX-INV. SO-14PIN	0%	1	PCE	IC603
111	2600037408	SN74LVC126APWLE	IC 3-STATE OUTPUT TSOP-14P	100%	1	PCE	IC604
112	2600037407	74LVC126A PW	IC 3-STATE OUTPUT TSOP-14P	0%	1	PCE	IC604
113	2600077708	SN74ACT32	IC QUAD 2-IN POS OR GATE SSOP-14P		1	PCE	IC504
114	2530117037	KS0127	IC MULTI VIDEO DECODER/SCALER		1	PCE	IC610
115	2610392045	TE28F400B3T110	IC FLASH EEPROM 4MB TSOP-48	100%	1	PCE	IC502
116	2610355270	MBM29LV400T-10	IC FLASH MEMORY 4MB 100nS T	0%	1	PCE	IC502
117	2610392091	MT28F400B1-8T	IC FLASH 4MB TOP TSOP-48P	0%	1	PCE	IC502
118	2530101012	SII150ACT100	IC PANEL-LINK TQFP-100P		1	PCE	IC513
119	2620097079	ICS501	IC LOCO PLL CLOCK MULTIPLIER		1	PCE	IC506
120	2620097179	ICS502M	IC LOCO PLL CLOCK MULTIPLIER		1	PCE	IC507
121	2600037408	SN74LVC126APWLE	IC 3-STATE OUTPUT TSOP-14P	100%	1	PCE	IC508
122	2600037407	74LVC126A PW	IC 3-STATE OUTPUT TSOP-14P	0%	1	PCE	IC508
123	0345262111	RR1220 4993 D	RES CH 1/10W 499K D 0805		1	PCE	R659
124	0345054111	RR1220 6201 D	RES CH 1/10W 6.2K D 0805		1	PCE	R678
125	0341159101	RC0805FR07 750R	RES CH 1/10W 750 F 0805	100%	1	PCE	R532
126	0341159102	RMC1/10 7500 FTP	RES CH 1/10W 750 F 0805	0%	1	PCE	R532
127	0341159104	232273467501	RES CH 1/10W 750 F 0805	0%	1	PCE	R532
128	2500098162	DS1708SESA/T&R	IC DUAL OUTPUT RESET CIRCUIT		1	PCE	IC505
129	0730350112	AT-49 22.1184MHZ	CRYSTAL 22.1184MHZ +-30PPM 49US		1	PCE	X501

DOT BOARD (5600093501)

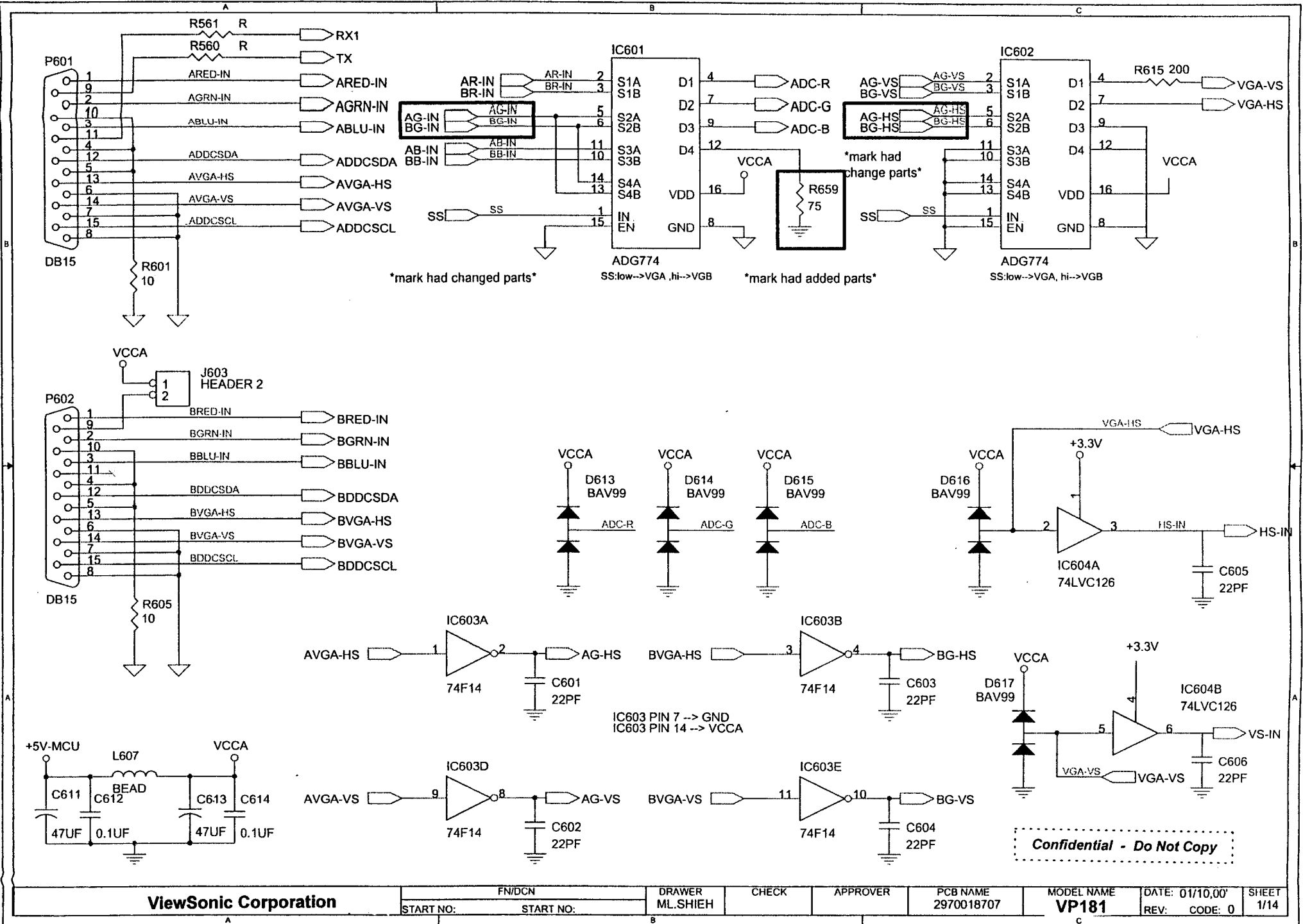
130	2450018031	SI9933DY	FET -20V -2A SO-8P		1	PCE	IC804
131	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC704
132	2500066120	PQ09DZ11	IC REGU 9V 1A SC-63-5P		1	PCE	IC803
133	2530085011	PT2313L	IC 4-CH AUDIO PROCESSOR SO-28P		1	PCE	IC801
134	2540193239	MIC2526-2BM	IC DUAL USB HS SOIC-8		1	PCE	IC701
135	2540193239	MIC2526-2BM	IC DUAL USB HS SOIC-8		1	PCE	IC702
136	2610377029	KC82C160	IC USB HUB CONTROLLER PQFR-44P	100%	1	PCE	IC703
137	2610236429	KC82C160S	IC USB HUB CONTROLLER PQFP-44P	0%	1	PCE	IC703
138	2530100016	TDA1517	IC 2*6 STEREO CARD RADIO 9P		1	PCE	IC802

DIGITAL BOARD (5600091802)

139	2440046017	FDS9412	FET 30V 7.9A	100%	1	PCE	IC952
140	2440046031	SI4412DY	FET 30V 7A SO-8	0%	1	PCE	IC952
141	2450018031	SI9933DY	FET -20V -2A SO-8P		1	PCE	IC501
142	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC603
143	2500115018	LTC1624CS8	IC REGULATOR D/D SO-8P		1	PCE	IC951
144	2500119020	PQ3TZ53	IC REGU 3.3V 0.5A SC-63-5P		1	PCE	IC601

Section 7 - Recommended Service Parts List

145	2610328082	SII151CT100	IC PANEL-LINK TQFP-100P		1	PCE	IC602
146	2610328082	SII151CT100	IC PANEL-LINK TQFP-100P		1	PCE	IC604
147	2540005008	SN75LVDS83	IC TRANSMITTER TSSOP-56P	100%	1	PCE	IC502
148	2540170021	THC63LVDM83A	IC LVDS I/F TSSOP-56P	0%	1	PCE	IC502
149	2540005008	SN75LVDS83	IC TRANSMITTER TSSOP-56P	100%	1	PCE	IC503
150	2540170021	THC63LVDM83A	IC LVDS I/F TSSOP-56P	0%	1	PCE	IC503
151	2500047120	PQ3DZ13U	IC REGU 3.3V 1A SC-63-5P		1	PCE	IC504
152	2540193239	MIC2526-2BM	IC DUAL USB HS SOIC-8		1	PCE	IC702
153	2540193239	MIC2526-2BM	IC DUAL USB HS SOIC-8		1	PCE	IC703
154	2610101844	W78E51P-24	IC 8BIT MICROCONTROLLER PLCC44	100%	1	PCE	IC301
155	2610394044	W78E51BP-24	IC 8BIT UP PLCC44	0%	1	PCE	IC301
156	2610377029	KC82C160	IC USB HUB CONTROLLER PQFR-44P	100%	1	PCE	IC701
157	2610236429	KC82C160S	IC USB HUB CONTROLLER PQFP-44P	0%	1	PCE	IC701
158	2816701000	SIQ125-100	CHOKE SMT 10uH 4A		1	PCE	L202



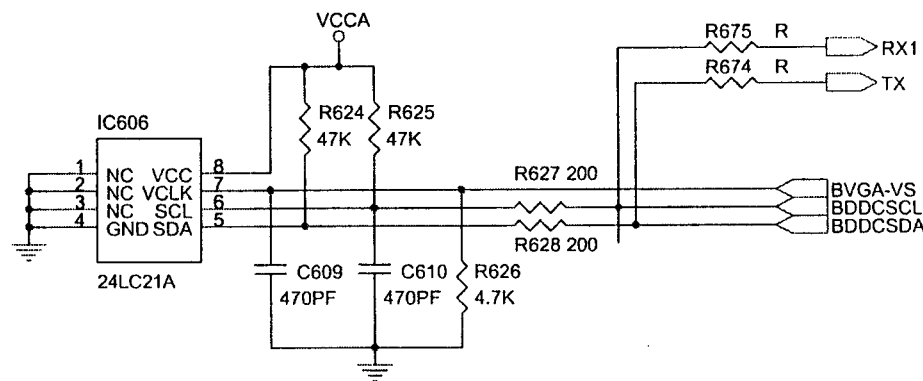
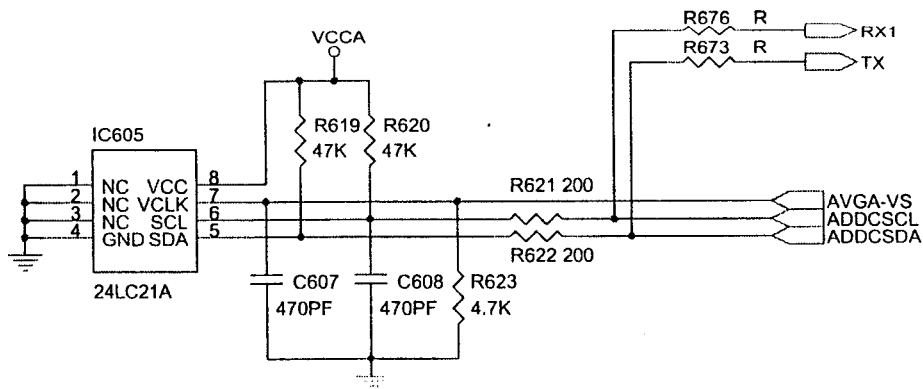
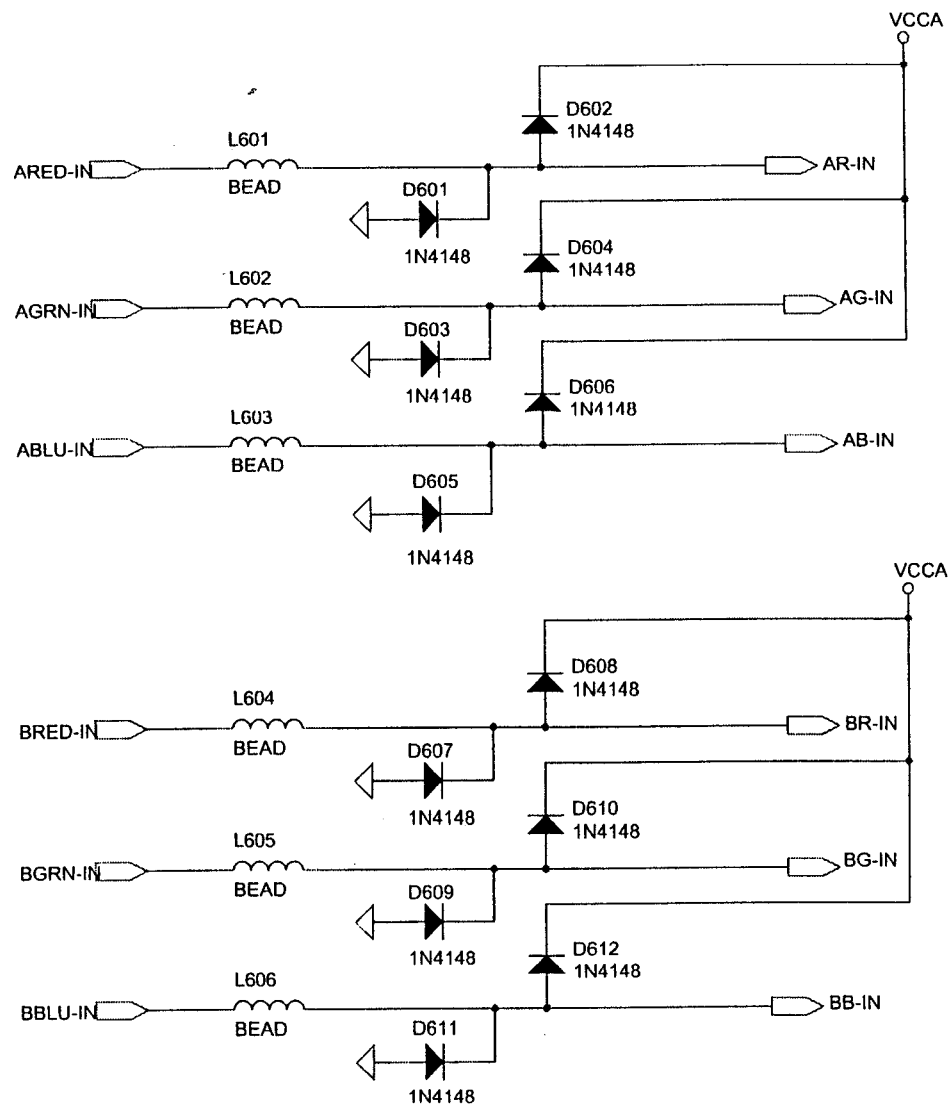
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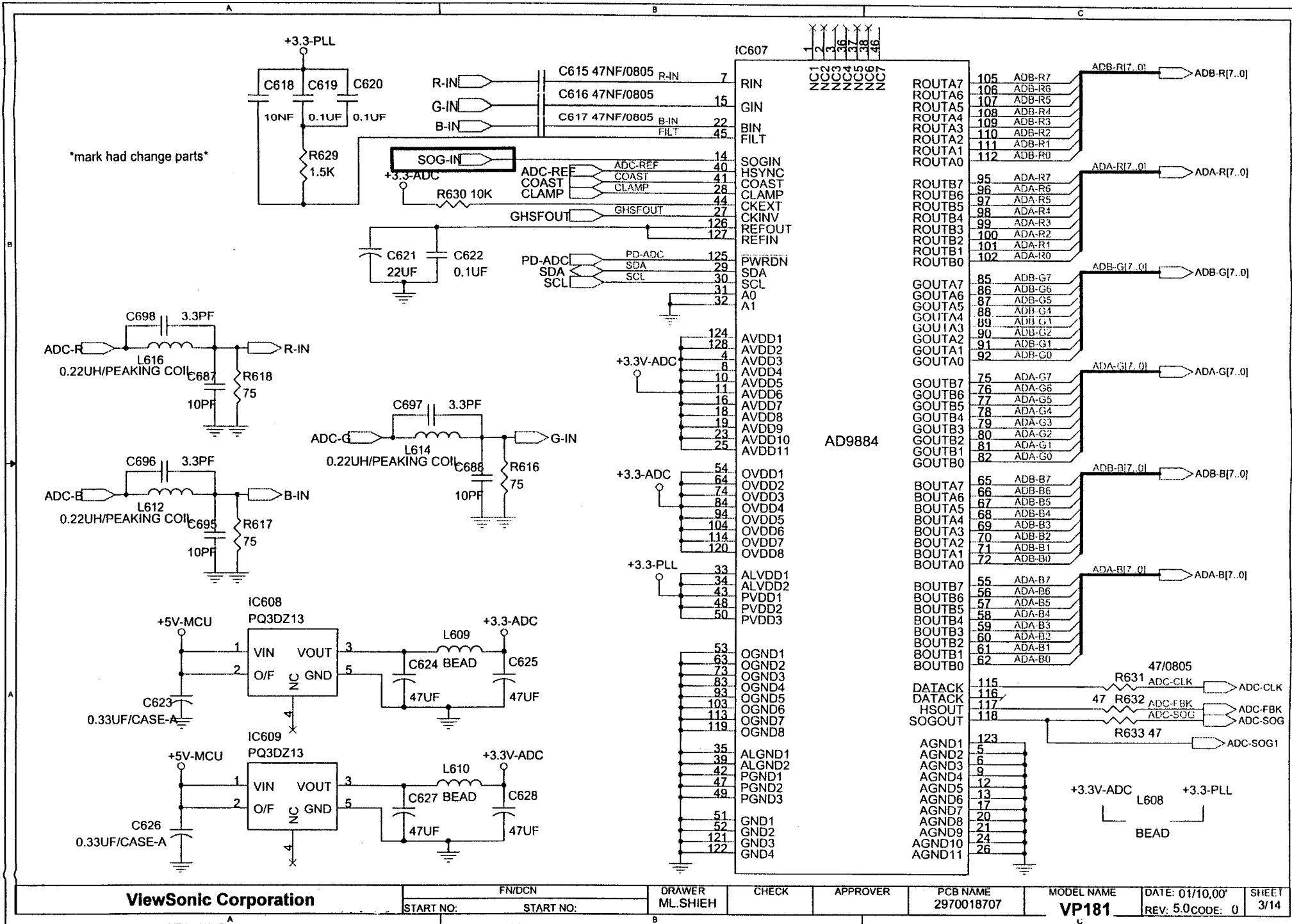
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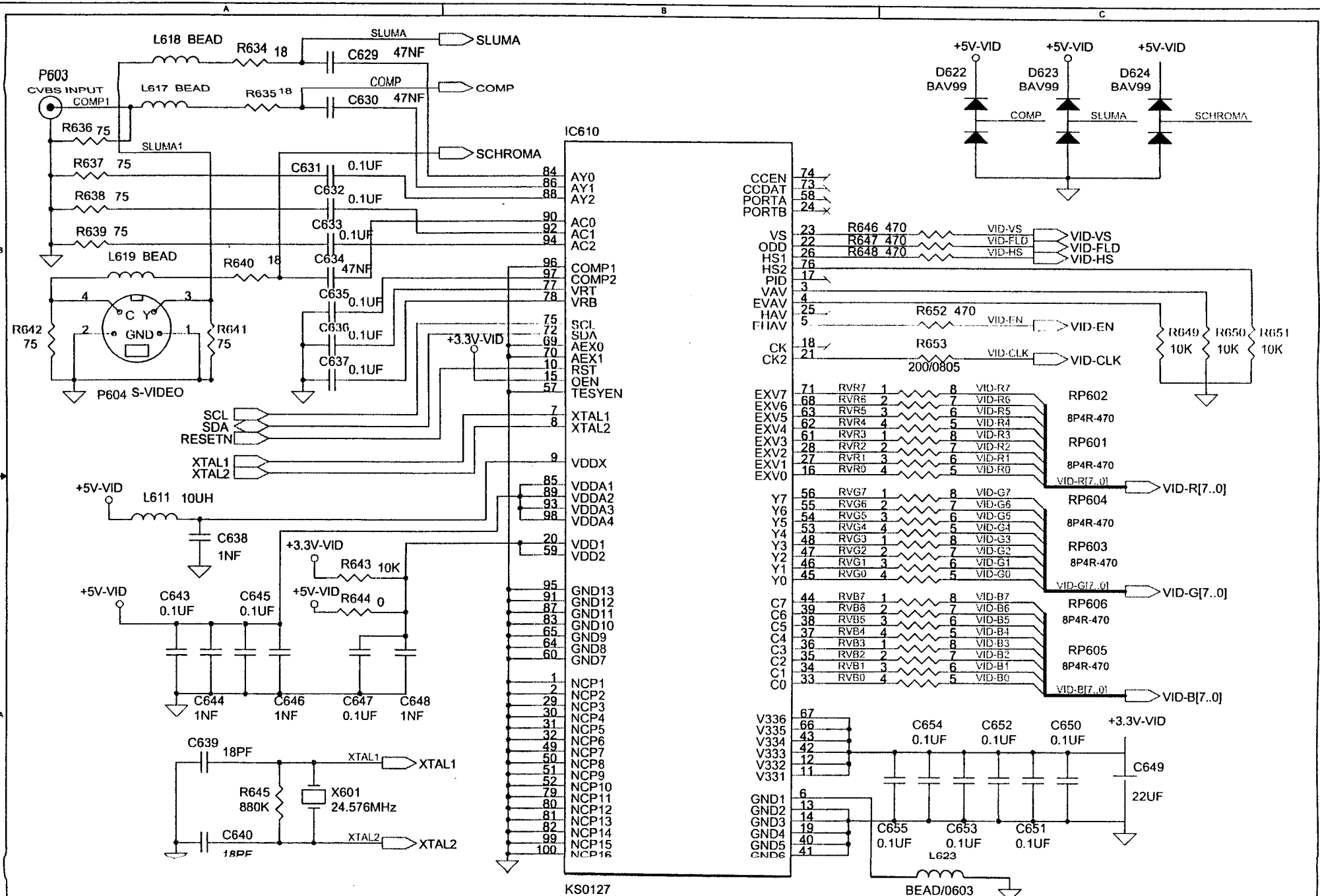
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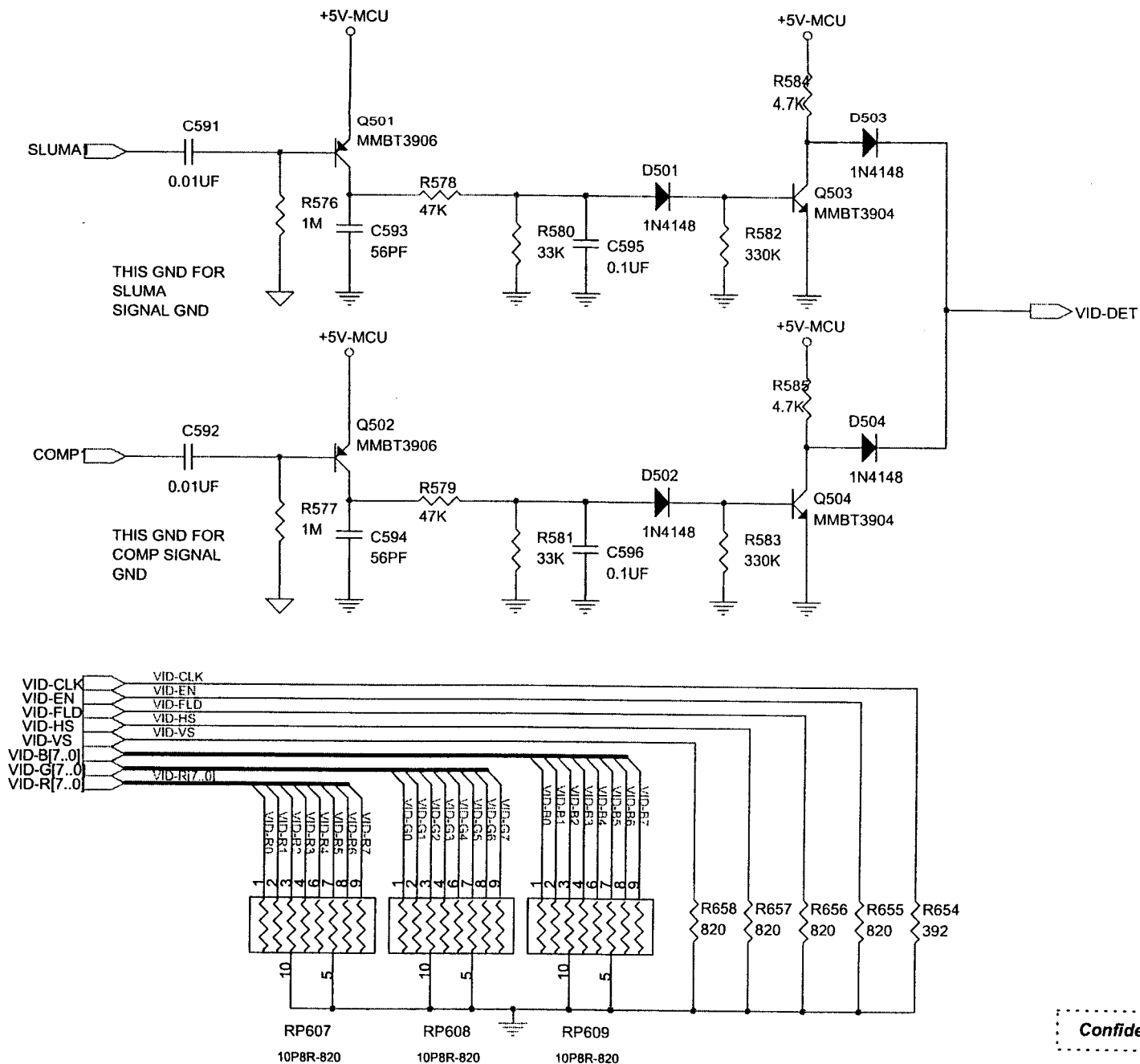
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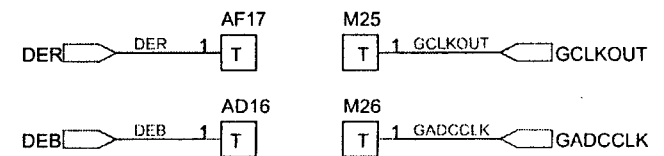
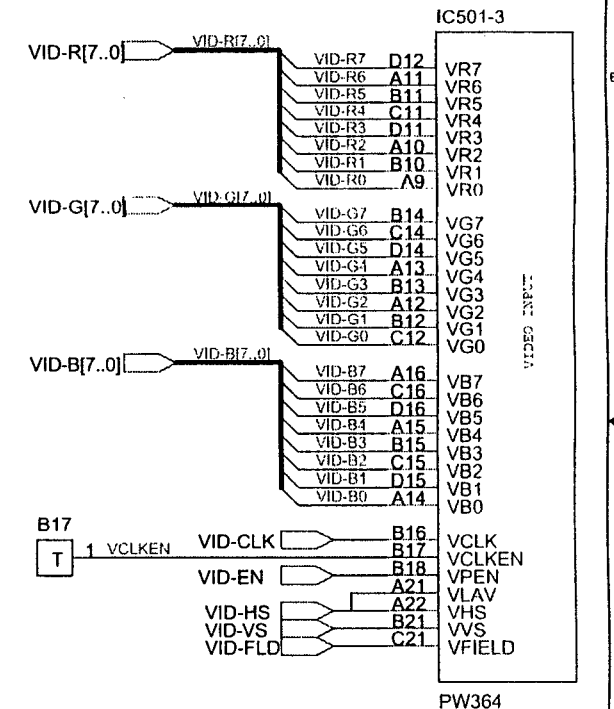
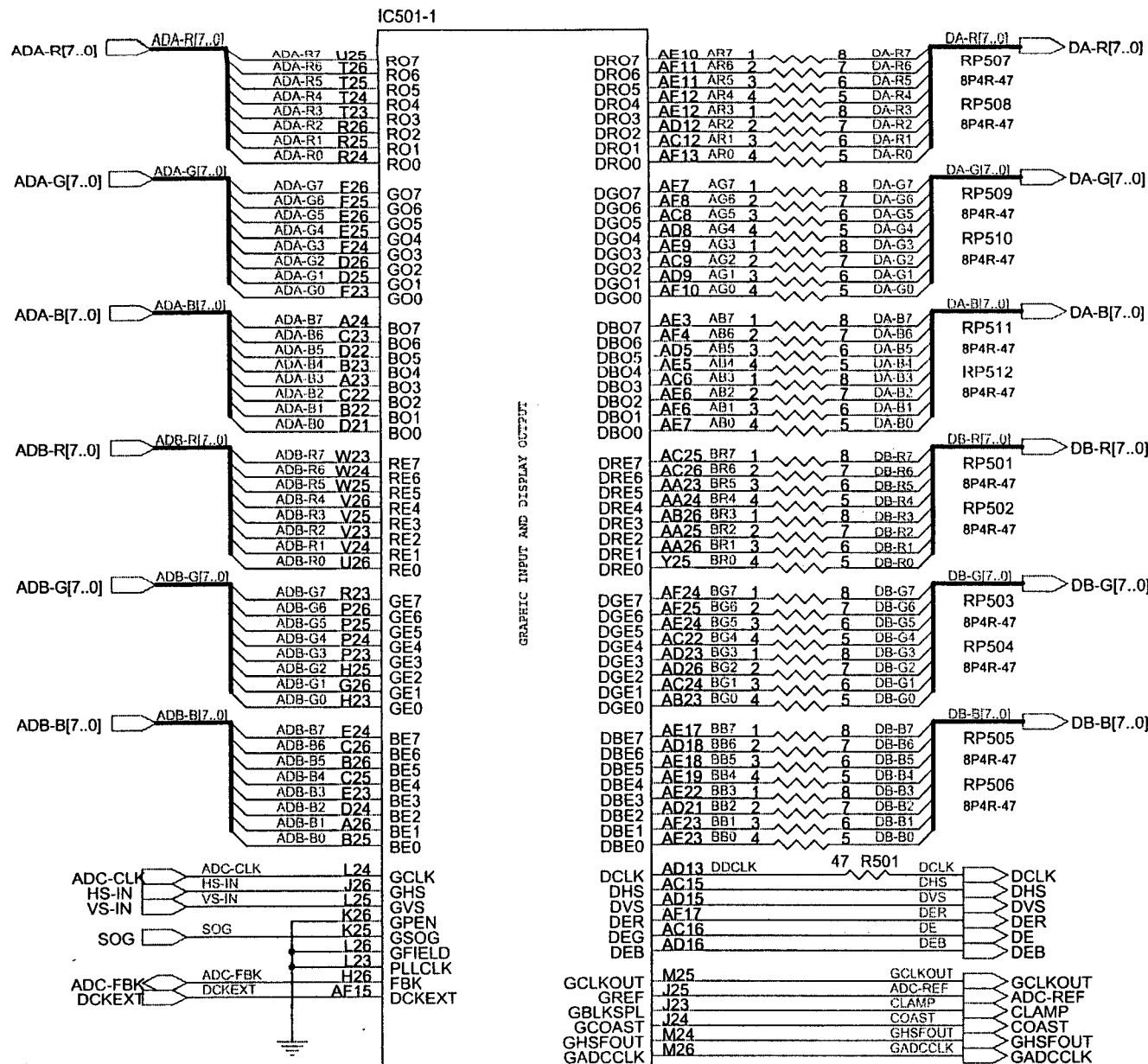
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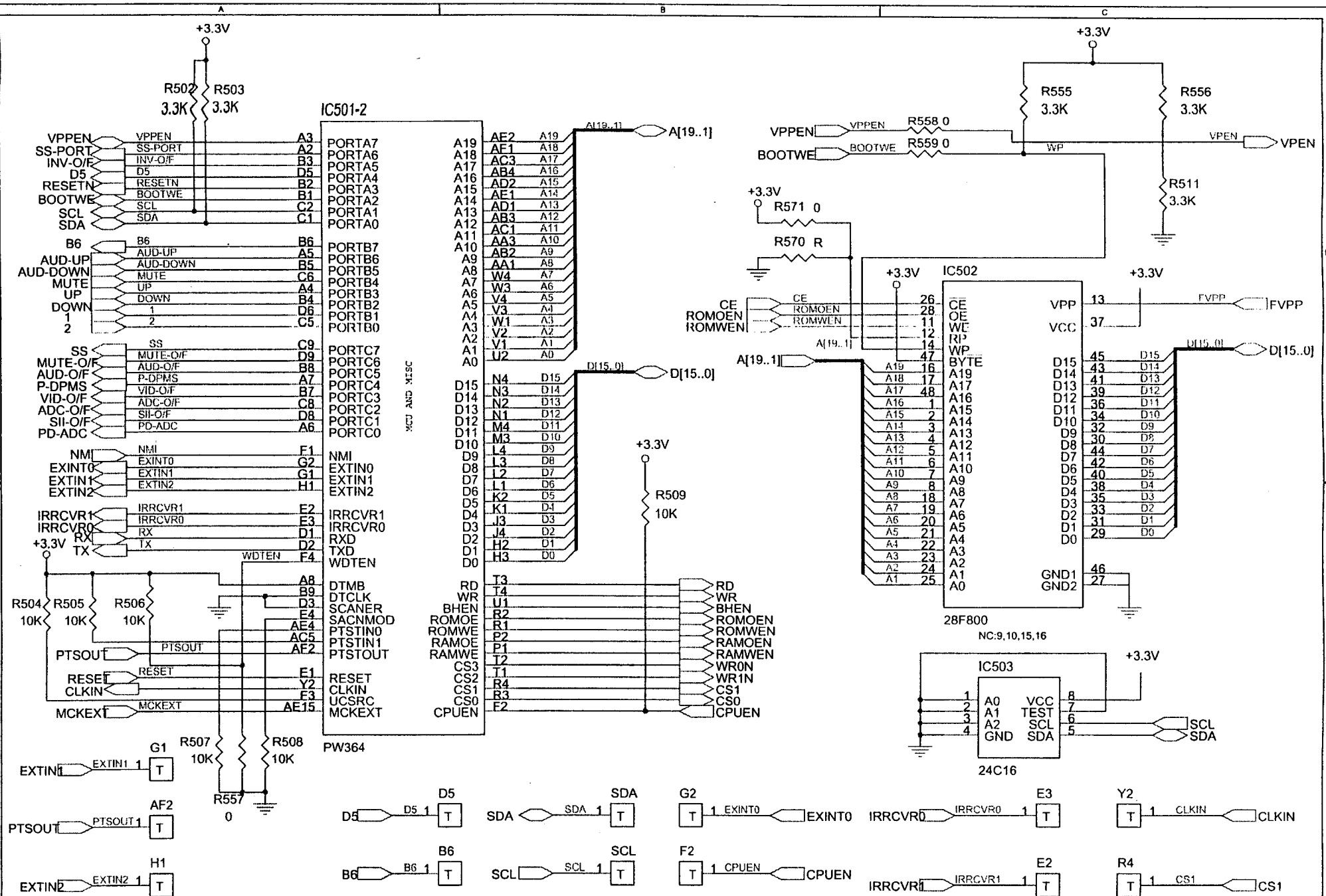
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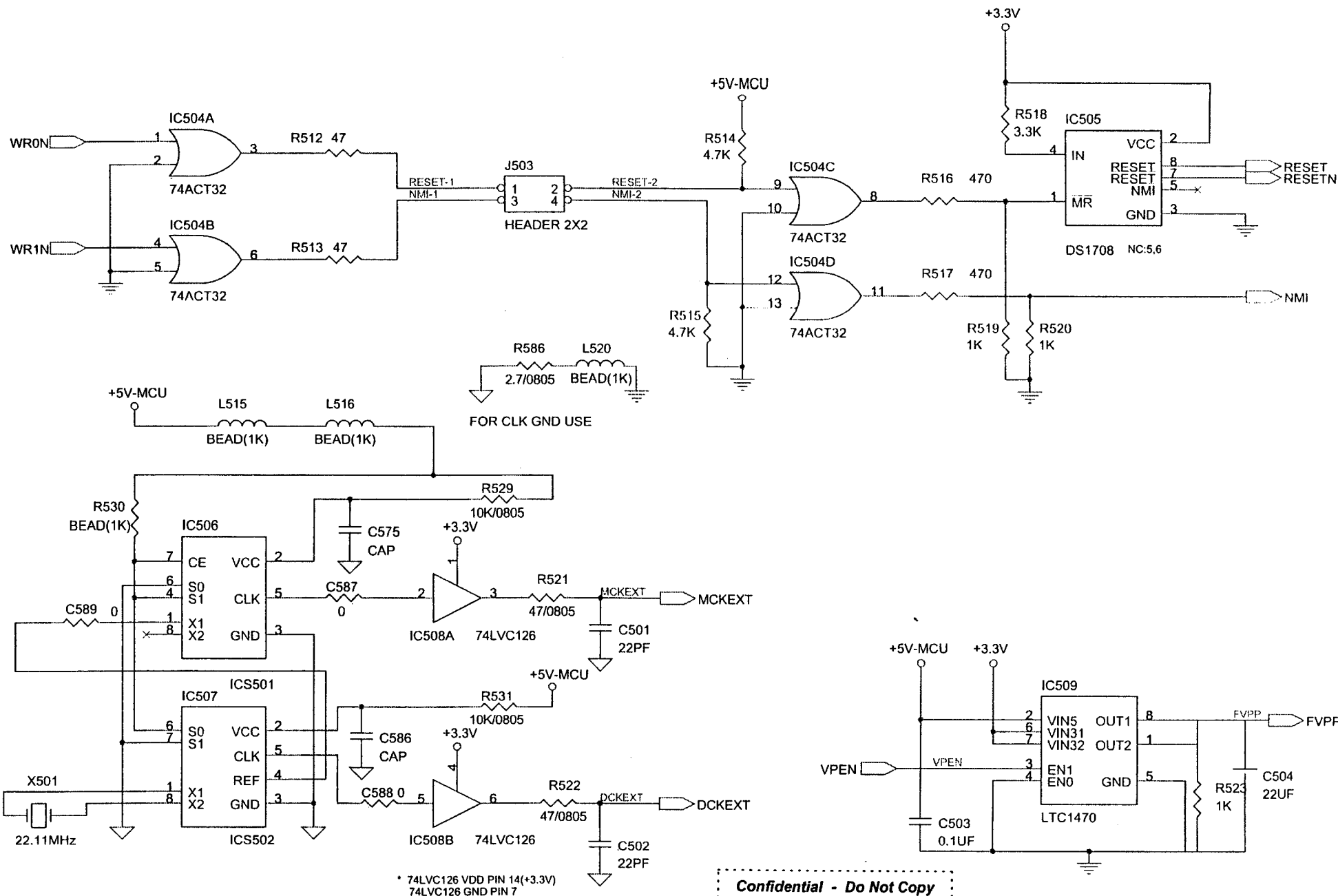
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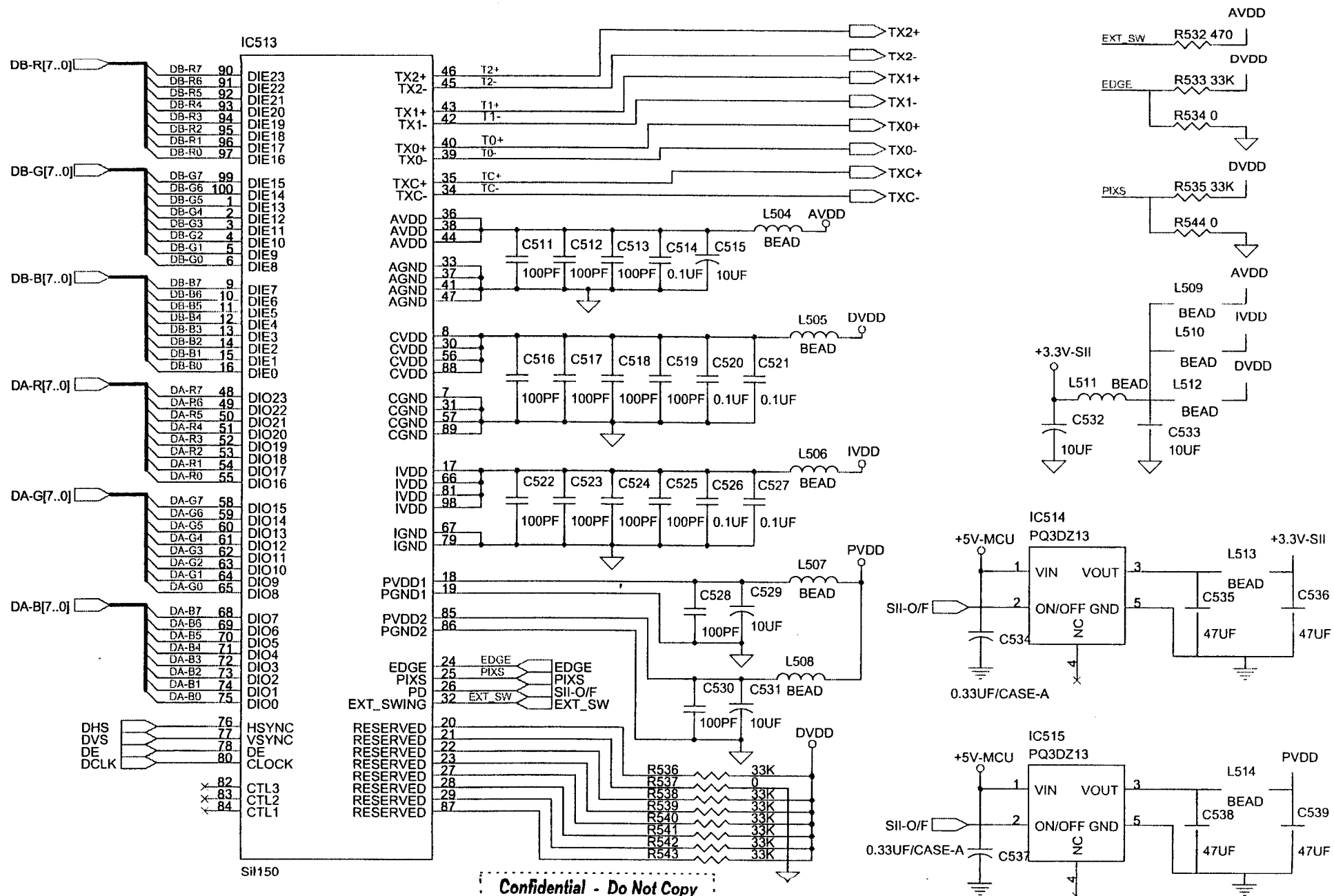
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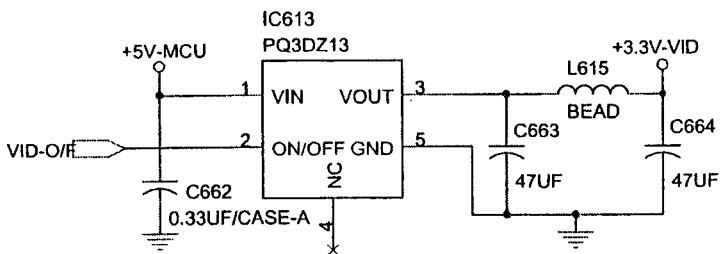
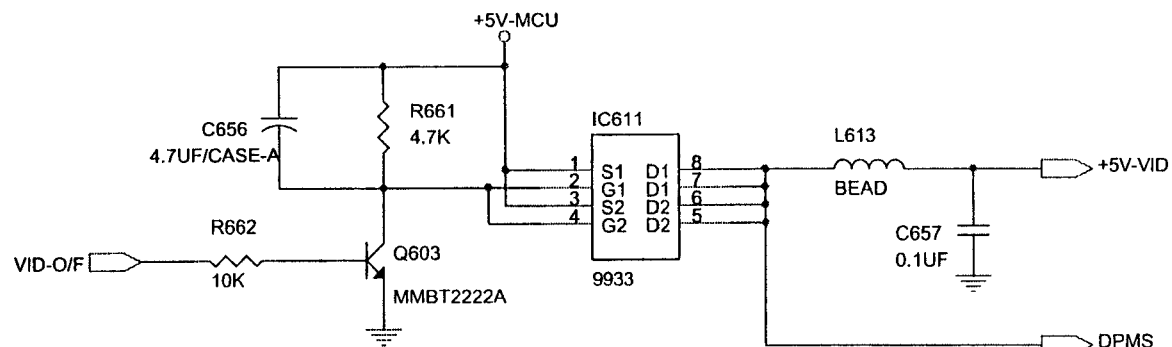
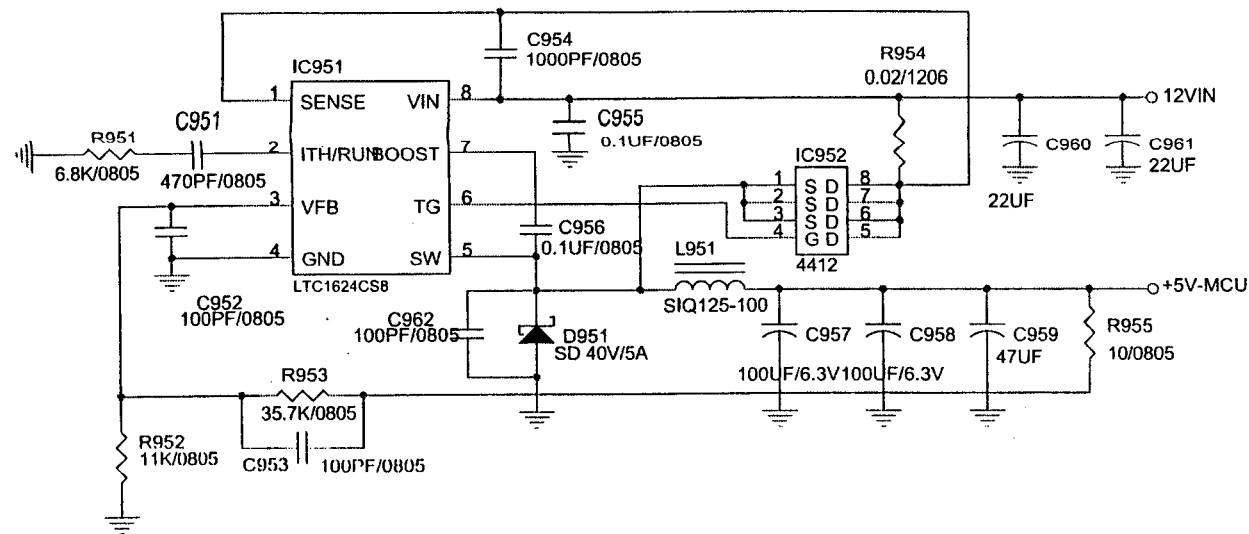
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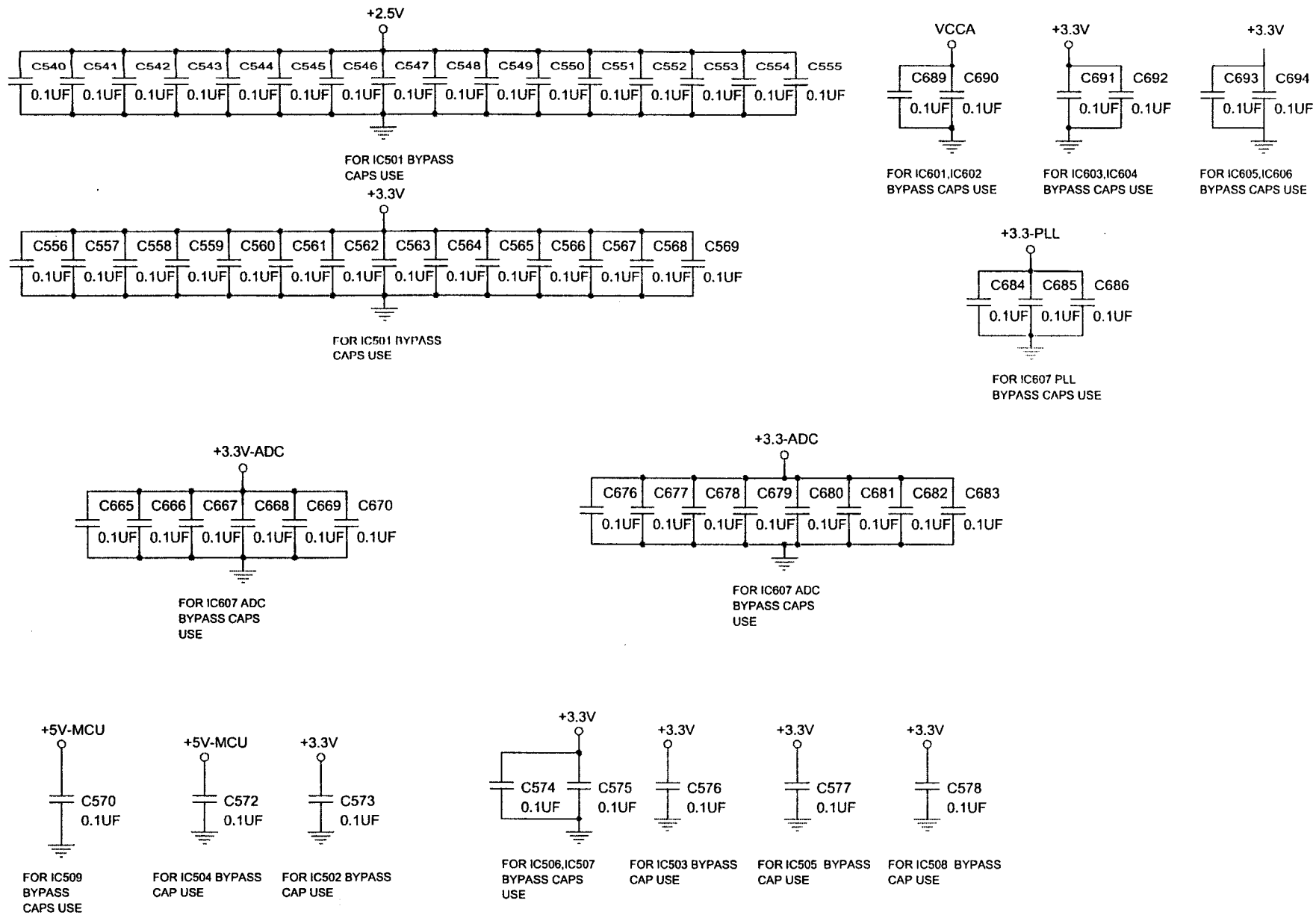
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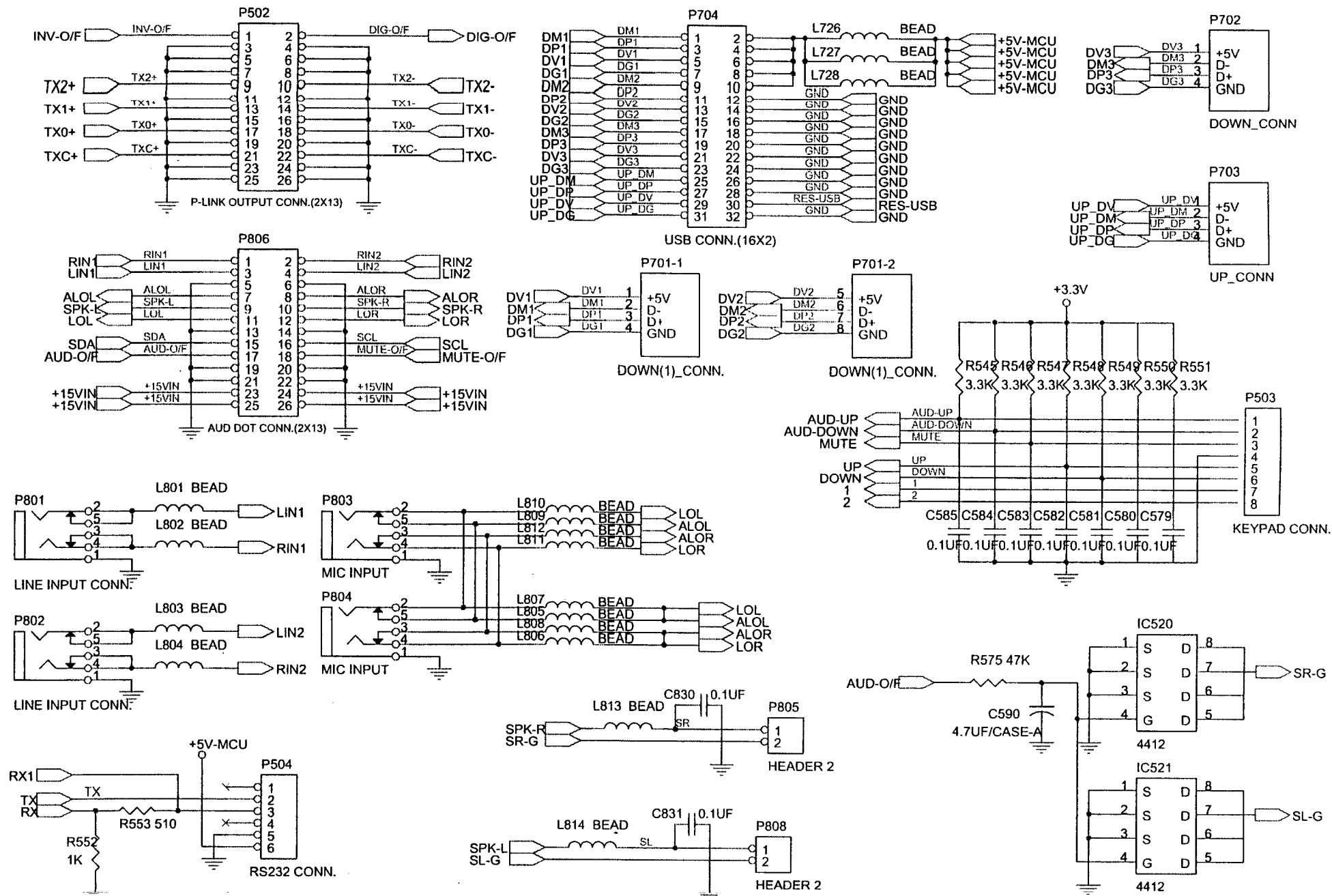
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PCB NAME
2970018707

MODEL NAME
VP181

DATE: 01/10/00
REV: CODE:

SHEET
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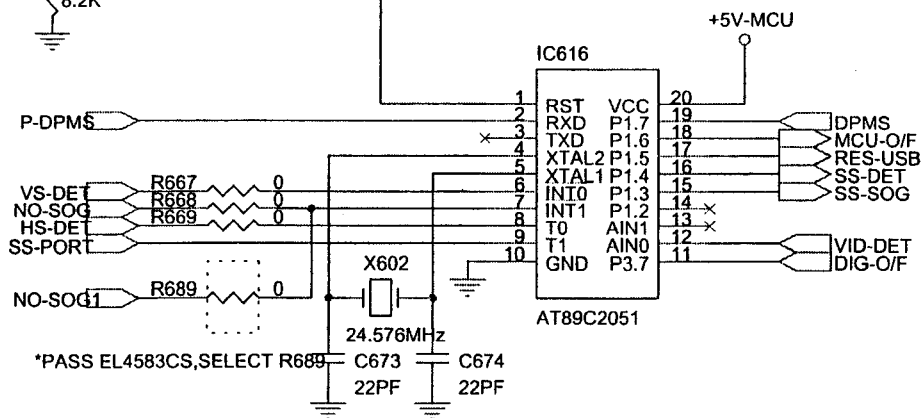
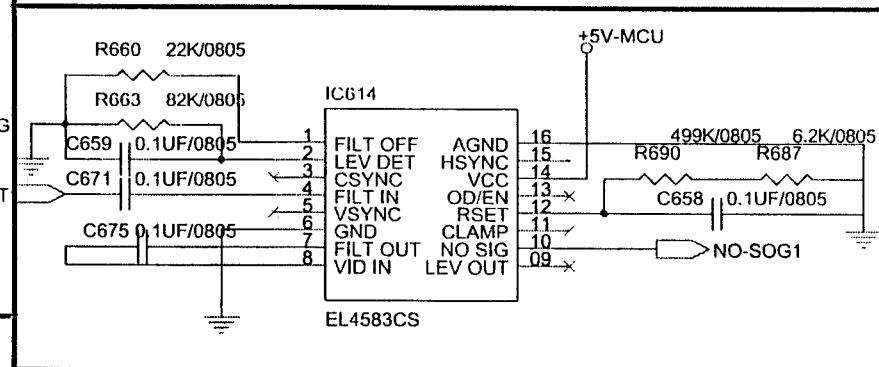
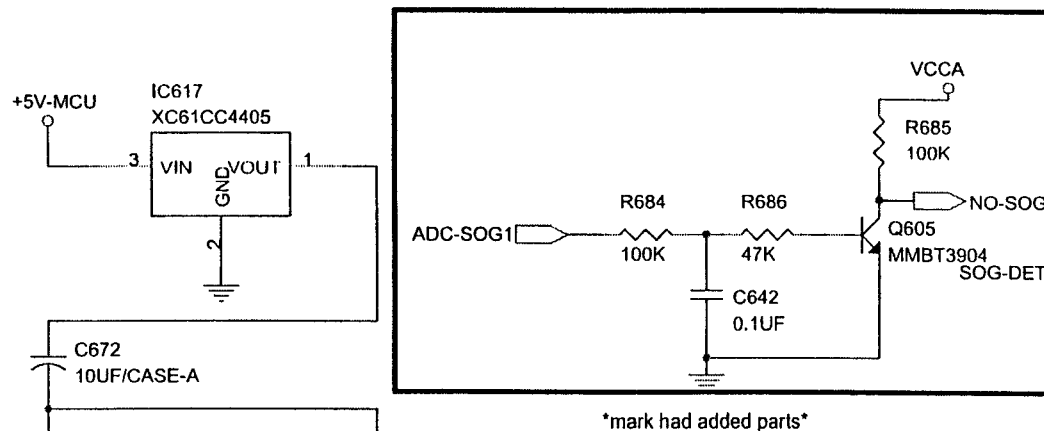
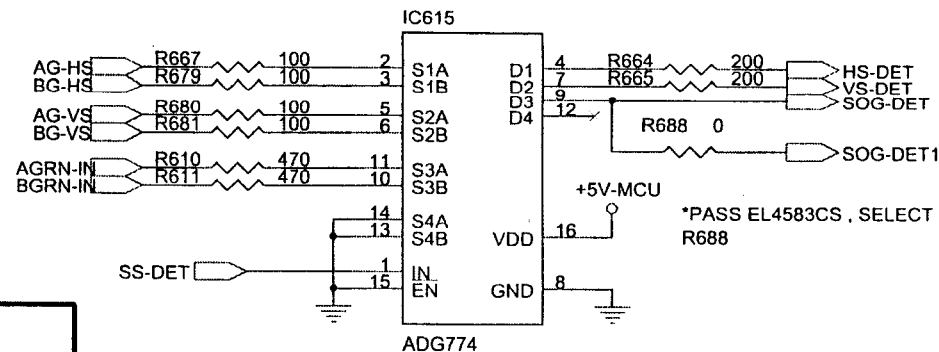
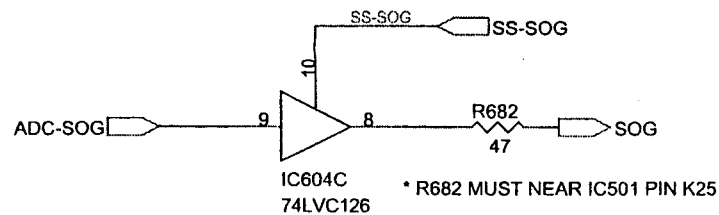
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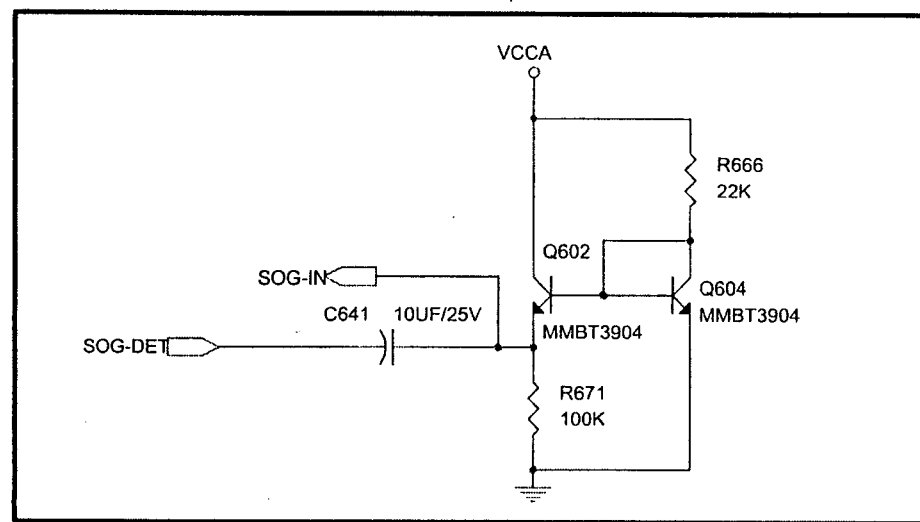
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PCB NAME
2970018707MODEL NAME
VP181DATE: 01/10/00
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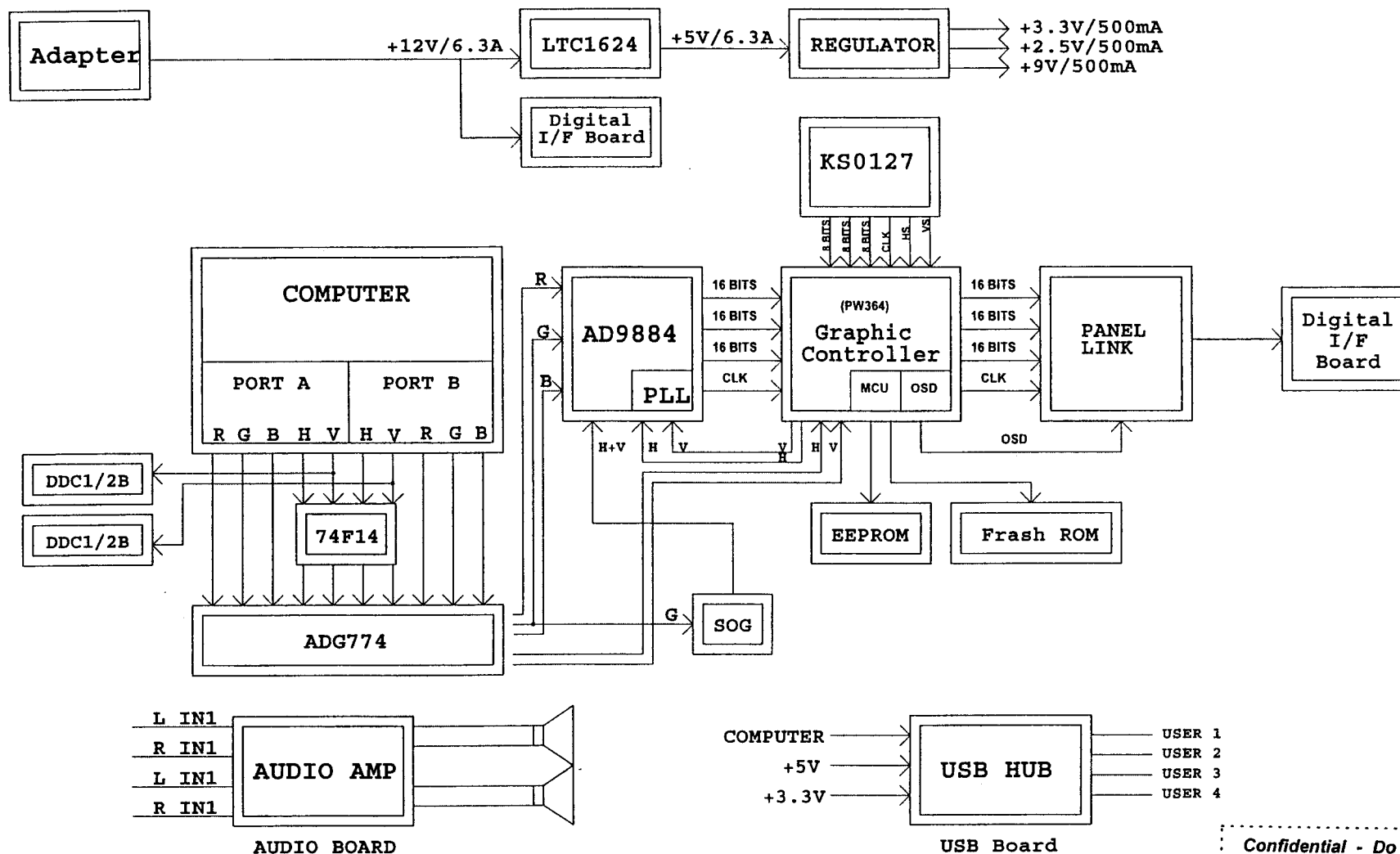
MODEL NAME
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VP181 BPV BLOCK DIAGRAM

INTERFACE BOARD



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PAGE: 1/1